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AN EXCURSION IN MAY.

Frontispiece.

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AND

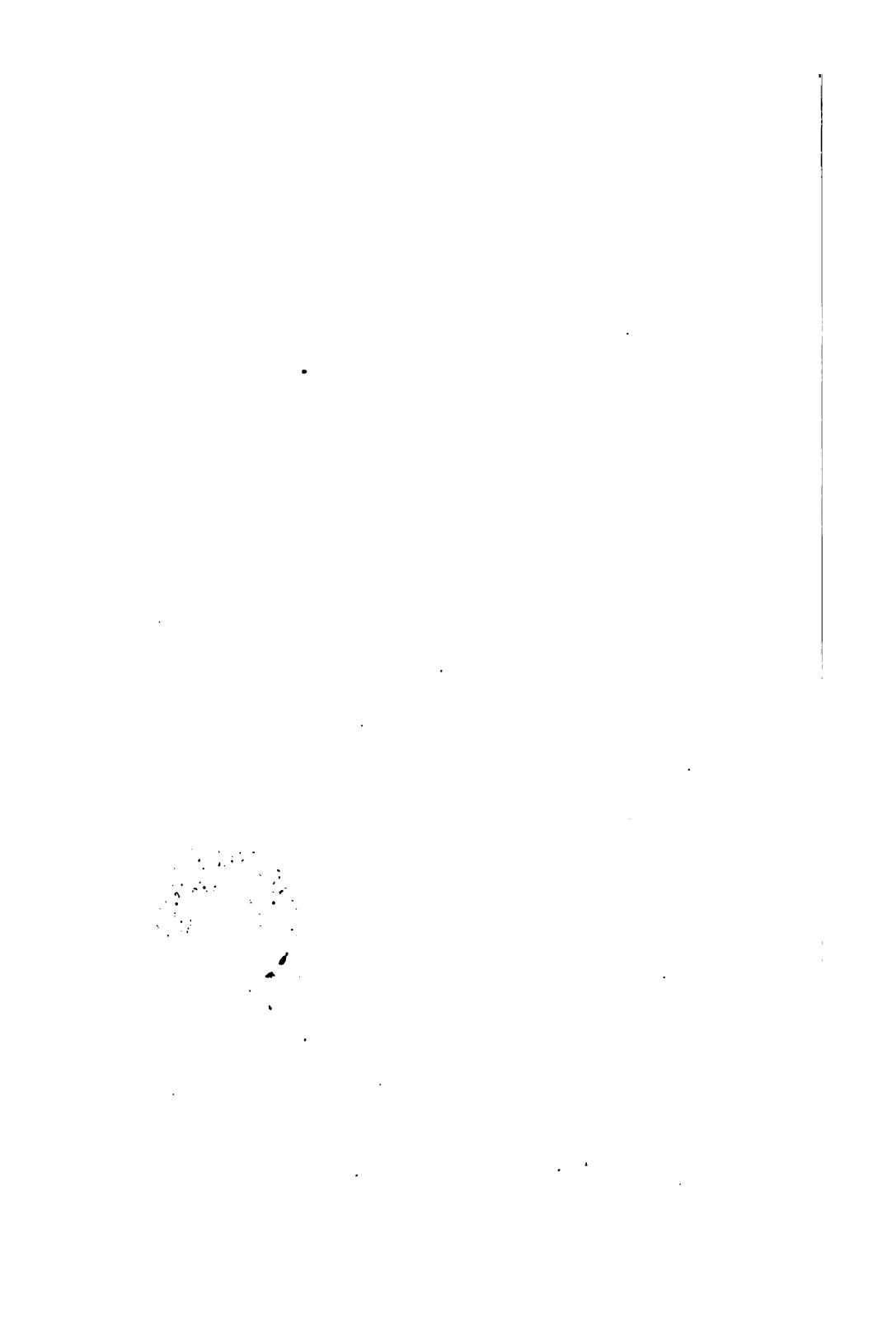
WHAT HE DID IN SCIENCE.



THE VIOLET (*Viola odorata*).

With Forty-six Illustrations.

LONDON: CHAPMAN AND HALL.



TOMMY TRY

AND

WHAT HE DID IN SCIENCE.

BY

CHARLES OTTLEY GROOM NAPIER,

(OF MERICHLSTON), F.G.S., ETC.,

AUTHOR OF "THE FOOD, USE, AND BEAUTY OF BRITISH BIRDS,"
AND OTHER WORKS.

With Forty-Six Illustrations,

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said he. And truly I was much delighted. There was a stuffed puma, or, as Mr. Showman styled it, "a silver lion;" there was a living land-tortoise, numerous parrots, cockatoos, and several monkeys, one of which was pulling at the tail of a macaw which occupied the same cage, and was screeching fearfully. A chained white-tailed eagle sat on its perch at the door, and occasionally cried and snapped its beak. I was quite as much pleased with what I had seen as were the other children who had been to Wombwell's menagerie.

My two companions departed for school shortly after this, and I was left for some little time without any associate. I made the acquaintance the following spring of a boy about four months older than myself, whose name was Fred. He was considered a wonderfully clever boy, and was brought forward as such on all occasions by his mother. He learned French and Latin and the pianoforte, and his accomplishments were constantly paraded. He was of a vainglorious disposition, and, like his mother, full of affectation. He repeated things with parrot-like exactness and magniloquence; everything he had was superb; his rocking-horse had won "the Derby," and his toy-gun was a Waterloo musket. These were felt by me to be exaggerations, and I therefore put little faith in his word. His mother was anxious that he should be dis-

tinguished for his knowledge of natural history, as well as for other branches of study. So she bought him a box of natural objects, with a printed explanatory catalogue; these she frequently exhibited to me, and my desire was excited to possess a similar box, but one in which raw and manufactured products from all parts of the world should be represented.

Now this was a good while before the Great Exhibition of 1851, and was an excellent idea, which should certainly be carried out upon a considerable scale in every town, as a necessary adjunct to national education; for old and young should be able to trace the things met with in common life, as far as possible to their sources.

My young friend and I had several quarrels, for his temper was arrogant and capricious, and mine was irritable and unyielding; but we parted excellent friends, he giving me as a welcome legacy a fragment of sulphate of baryta,—heavy spar, the name of which was unknown to him,—a serpula, and some pectens.

“I can give you,” said he, with a consequential air, “the name of one of these: it is *Serpula triquetra* upon a pecten.”

I lost this young friend, but was not long in acquiring three new ones, whom I shall call Johnny, Edward, and Alfred; they were of various dispositions and tastes. Johnny was a mild, amiable, and affec-

tionate boy, of a liberal and generous disposition, extremely obliging and docile, but little fond of study, and exceedingly devoted to the "pleasures of the table." He was very fond of animals, especially of horses, which latter he was constantly delineating. He liked driving so much that he would make friends with the butcher's and baker's boys for the privilege of driving their carts. When asked what profession he would like to follow, Johnny, who was then not more than eight years old, said he wished to be a banker and a turf man.

Johnny cared nothing for natural history, but was sufficiently obliging to aid me in collecting specimens, of which his sisters also were rather fond. He appeared to realise the truth of the injunction, "It is more blessed to give than to receive;" for the first thing he thought of when he got money or anything that boys commonly value, was to share it with me, his favourite companion.

Edward was a loquacious, gormandising boy, of rather a selfish, domineering disposition, but not without some good principle and kindness of heart. Like Fred, he estimated everything connected with self at an extravagant rate. He had a good deal of prudence, and was of a more saving disposition than most English boys. He brought me the local paper on the occasion of a collection for the relief of the sufferers from the famine in Ireland, with "Master

Edward, 5s.,” in type. Edward had little taste for natural history, but was fond of anything sensational and pedantic.

Our garden was bordered by a privet hedge, on which we were rejoiced to find several large and beautiful green caterpillars, with lilac stripes on



Larva of the Privet Hawk-moth (*Sphinx lagustris*).

each side, and a black horn at the tail. I had a general idea that all caterpillars produced butterflies, and was anxious to feed these until they entered the chrysalis state. So a band-box was procured, and an abundance of fresh leaves were given to the creatures daily, but after living for three or four weeks, they withered and died, having been perhaps handled too much.

An elderly spinster had been the object of the attentions of an eccentric bachelor of her own age.

She had given him at one time some encouragement, and they had taken many walks together in the beautiful lanes of Devonshire, and had gathered many wild plants, and dried them in remembrance of sentimental hours ; these were carefully gummed on paper and named in the neat round hand of the old bachelor. But as ill-luck would have it, the capricious lady had some dispute with the old gentleman, whose career was, however, cut short by a fever. The botanical collection which the pair had formed, for years lay dormant, when a fit of generosity seized the lady, and she determined to make some use of it ; she sent for me, and presented it. This was the most valuable gift I had as yet received, and I was of course overcome by its magnitude : seven hundred plants of more than six hundred species, all named by a good botanist, with the localities, and periods of flowering.

My friend Alfred, who was two years older than myself, was of a mild disposition, straightforward, and honourable, but a little inclined to petty vanity ; yet he was much more obliging than Edward. He had no companions, being kept pretty strictly under petticoat government, in harmony with which, he was two years longer than usual in leaving off the semi-female attire. His mother was a rational, kind-hearted, and excellent woman, who endeavoured to bring up her only child well. He was



THE COMFREY (*Symphytum officinale*), found on the banks of the Canal.

Page 9.

an old companion of my late friend, Fred, and has received instruction from the box of objects. His mother, during several years' residence at Bath, had been led by the force of example to make a small collection of dried plants, and these were carefully preserved by her, with the endeavour to interest her son in botany, and she to a great extent succeeded ; but Edward was never enthusiastic on the subject, he was not of that turn.

We took many walks together in search of plants, one of the first of which was to the banks of the canal. Being at that time much neglected, it was full of weeds, but many of these were of beautiful species. There were the Marsh Marigold (*Calantha vulgaris*), with its magnificent golden blossoms ; the Purple Loose-strife (*Lythrum salicaria*), with its rich and finely-cut flowers arranged in a spike ; several species of sedges (*Carex*), the Yellow Iris (*Iris pseudo acoris*), the Hairy Willow-herb (*Epilobium hirsutum*), and the Water-starwort (*Callitricha verna*). These with a bunch of luxuriant grass formed a most interesting series of plants, which arranged in a vase of water, were compared with the descriptions in Withering's Botany. The class and order, according to the Linnæan system, were first discovered, which put us on the right track. The descriptions of the plants under the different orders, which corresponded with those we had found, were next compared, and we

had seldom any difficulty in obtaining the names of all, except those in the more difficult orders of the grasses and umbelliferous plants. The Linnæan system of botany, which I had by this time thoroughly mastered, assisted me very greatly in acquiring a knowledge of plants. If liable to objection on account of its artificial character, it has the advantage of tangibility, being arranged on a system of numerical progression, unlike the natural systems of De Jussieu and De Candolle. At this period I examined a small work on the "Natural System of Botany," which being very dry and ill-written, gave me an aversion to the entire arrangement.

CHAPTER II.

A Visit to the Seaside leads to important Discoveries in Chemistry.

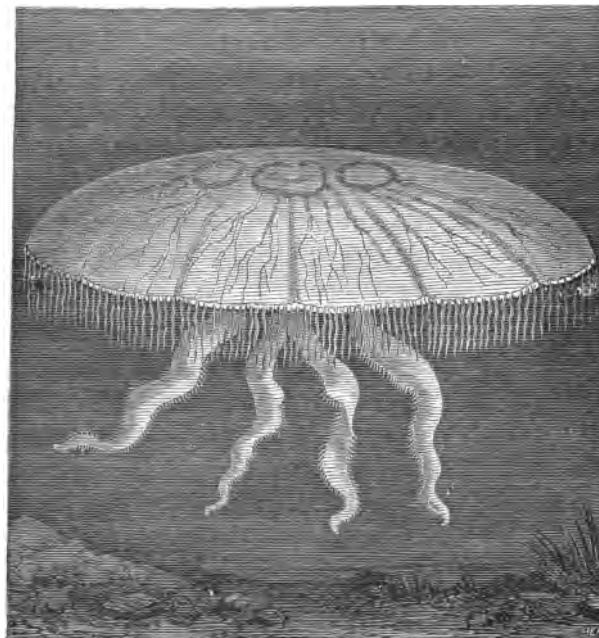
—My first Master in Science.—A Liberal Education.—A Peep at a Large School.—The Philosopher and the Fat Boy.—A Dishonest Bird-stuffer.—My Birds' Eggs and their Fate.

I WAS about nine years old when I had the whooping cough, which rendered a change to the seaside desirable. My friend Edward, myself, and three other children were accordingly taken down to Exmouth. We took the train to Starcross and crossed the river in a barge, where, for the first time, I became aware of the influence of the refraction of light in causing deception with regard to the distance between objects.

We were passing through beautifully clear shallow water ; “a school of fish” surrounded the barge on all sides, which were little disturbed by the oars. I leaned over the side and gazed on the finny crowd, and singling out one conspicuous by its superior size, I dashed my hand into the water, and endeavoured to seize it, when I found, to my surprise, that my arm was not one-third long enough, and that the bottom, instead of being, as I thought, not

more than three feet distant, was in reality eight or nine.

The beach at Exmouth, throughout a great part of its extent, is sandy, and affords a considerable



Auriculated Aurelius (Medusa). (*Aurelia aurita*, LAMK.) One-third nat. size.

quantity of shells. Of these I obtained in a few days about thirty species, of which the greater part were marine, but there were one or two land and fresh-water kinds, which had doubtless floated down the river Exe.

I noticed on the sand large numbers of Medusæ, which varied from the size of a crown-piece to nine inches in diameter. These appeared to be of two species, the most common of which was of an opalescent white, with stripes of lilac; a second was of a smoky white, with darker marks of the same colour. I was anxious to take home some of these, but on handling them I received a sting similar to that from a nettle. I afterwards heard that a species of this class is called the "sea-nettle." I avenged myself for the sting by afterwards chopping up many of these animals with my spade.

The rocks farther down the river afforded numerous limpets—*Patella vulgata* and *P. pellucida*, the



Dog-whelk (*Purpura lapillus*).

Dog-whelk, *Purpura lapillus*, and a peculiar species of Algae, which, although truly cryptogamic, had somewhat the appearance of the Grass Rock, *Zostera marina*. This plant reminded me of some weed which had been brought home by a sea captain from the Bahama banks, and was believed by him to be the same as the floating marine plants which served

to assure the mutinous crew of Columbus of the existence of land in that part of the world. It met him at the gates of the New World to strew his path, as it were, with the flowers of ocean, to hail the triumph of its conqueror and its king. This simple weed opened to me a new domain—the vast world of chemistry.

I put some of the weed in a bottle of fresh water, to compare it with that brought from the West Indies. It had been there about a fortnight, when I noticed a great change in the water, from a colourless state to a hyacinthine violet, resembling the modern magenta; and I have since thought that a reaction had taken place similar to that which occurs during the formation of litmus, cudbear, or archil.

My female friends at once exclaimed that I had re-discovered the purple of Tyre. I dipped dolls' clothes of different materials in the dye, to which I added a small proportion of soda and alum; calico which I stained with it, appeared of a bright purple-red colour, which it retained for years.

Being very anxious to procure the names of shells I had found, I made frequent visits to the chief circulating library in the town, and inquired for books on conchology. I could obtain very few, and those were old and of an inferior character. We had scarcely any acquaintances who took an interest in science, and none of them were at all addicted to

conchology. I, however, purchased a small book, which gave me some general ideas on the subject, and an outline of the Linnæan and Lamarckian arrangements. The first I soon mastered; but that of Lamarck, embracing a much greater number of distinct genera, was at that time beyond my capacity, for I had few figures and scarcely any shells to illustrate it. The necessity for a system of some kind assails the student at the entrance of his course. Memory flags on the road to knowledge if there are no rests; and sign-posts along common roads fitly represent types of genera.

My friend Alfred frequently congratulated me on the possession of the valuable collection of dried plants; while I, on the contrary, considered him, as the owner of a copy of Withering's Botany, better off than myself.

During the ensuing winter I attended several lectures on chemistry at a large school, the master of which had a great love for and considerable knowledge of science, without being entitled to be called, strictly speaking, a scientific man. He had, for a private individual, an extensive museum, which filled the rooms of his house. There were several microscopes, working models of steam-engines, air-pumps, and a considerable series of electrical apparatus, with a somewhat extensive collection of minerals, some hundred coins, shells, a few birds with their eggs, a

herbarium of nearly one thousand plants, and a collection of savage weapons, with a few relics of antiquity. The rooms which the objects occupied looked out on a street, and were very far from cheerful, but once in them, with the door closed behind me, I had ample material for thought.

The proprietor had named his establishment the Model Polytechnic Institution, for there he hoped to cultivate those sciences which, by giving man control over the earth and its contents, might contribute to elevate him still further above those brutes from which some ethnologists are willing to assign his origin.

The boys took considerable interest in the lectures ; some devoted their leisure time to different branches of zoology, botany, or chemistry, while others copied the model steam-engines or electrical apparatus ; but the spirited schoolmaster was far, far in advance of his age, for—nearly twenty years after—Professor Huxley, at the head of the biological section of the British Association, remarked “that science forms at present no necessary portion of an English liberal education.”

When will Britannia remove that dust which obscures her seats of learning—live in the present, but not forget the past ? Knowledge will make giant strides when the education of young minds mainly consists in the observation of the living.

Personal experiences have a much more vivid effect on men than their records ; living are preferable to stuffed animals, and spoken to dead languages. The aim of education should be to fit individuals for a useful existence. Education at least begins with man's birth, and it only ends with his death ; but it has its phases. The training the infant receives, physical and mental, is seen in the schoolboy, whose pursuits at that time epitomize his professional studies, and his career in his walk of life is the reflex of all his previous existence.

How much may be done by adapting the course of training and study to the qualities and powers of the embryo man ! His qualities, varied as the medium through which light passes, can find in judicious training, those elements which assist in neutralising their natural inequalities.

The Doctor's school was to be founded on a nice appreciation of the individual characters of the pupils. They were to be encouraged to use their senses for experiment, to enable them to acquire that accurate and detailed knowledge in early boyhood which forms the only basis of a sound education : this the Doctor wisely felt to be best secured by the study of natural objects. Not that he neglected to encourage his pupils to commune with the great minds of antiquity, but employed his utmost efforts to induce them to study their works in their original language;

for he aimed at making science a recreation rather than a main branch of education. But his patrons, the Devonshire farmers, thought that a great sacrifice was made to the practical when they consented to the study of Latin grammar. "Oologies" were not suited to them ; they only believed in reading, writing, arithmetic, a little book-keeping, and——the Devonshire drawl ; and recreations consisting of cricket, marbles, cream, apples, and cider. In proportion as his lectures and museum began to attract attention in the town his school diminished, and after some years he determined to accommodate his system of mental navigation to the lazy Exe ; yet he still valued science himself, and declined packing up his museum in a beer vat.

He had two pupils. The first had every sympathy with him ; appreciated his efforts for his intellectual advancement ; and by his extraordinary intelligence gave hope that his master's care would in the end be crowned by viewing him enter on a brilliant career. He was the son of an affluent Devonshire farmer, who had little sympathy with his boy's tastes.

The second pupil, from the neighbourhood of London, was about thirteen years of age, but weighed twelve stone. Every limb was overcharged with fat, which also obscured his vision ; his intellect and attainments were much below the average,

but he managed to avoid being the dunce of the school. He had a ravenous appetite, and his father stipulated for his being allowed a pint of beer every day. At a meeting of a farmers' club this boy occupied the seat of honour; he was called "a glorious young man," and received many invitations to farmhouses.

The youthful genius, having little sympathy with the coarse mirth that surrounded him, received no attention or presents; while his companion, on his departure for school, carried away a cask of beer and half a cask of cider, besides apples, cream, and jam enough to keep him for a month, even at his extravagant rate of consumption.

One of the Doctor's oldest pupils was frequently in our house: he had some taste for shooting, and had received lessons in bird-stuffing. He had formed a collection of eggs, which, as he was on the point of starting for the West Indies, were being packed up. He was kind enough to give me several duplicates, among which I may mention two eggs of the White Throat (*Sylvia cinerea*), which he wrongly called the Greenfinch (*Fringilla chloris*). He gave me several birds' skins, which he arranged with a bird-stuffer to mount for me. Often did I go to this man to inquire whether my specimens were done. "Next week," or "to-morrow," was the invariable answer, until, after the lapse of about

ay
He

was shown the dealer's whole stock, and particularly wanted some crows' eggs. Eggs which might pass for either rooks' or crows' were produced. "These," he said, "are undoubtedly rooks'." The young man bought several and left. When he was gone I examined a few of these "rooks' eggs," and found they were marked "carrion crows." "Are these rooks'?" said I. "Oh, yes," said he. "But they are marked crows'," said I. "The best naturalists have lately decided," replied he, "that rooks and crows are the same." I smiled, but declined to purchase.

Collecting eggs with great diligence, I had soon the largest number of any of my acquaintances—having four times as many as either of the public or private museums I have described. I employed country boys to bring me eggs from considerable distances. I fitted up a deal box twenty inches by twelve, on the top of which I put a piece of glass; there I displayed my whole collection, which numbered about sixty-five species, and mostly consisted of two of each sort. These I flattered myself, as they lay on white cotton wool, looked much better than when strung.

But I was destined to get a large and unexpected increase from another quarter. My friend Alfred being on the point of starting to spend the vacation in the north of Devon, I charged him particularly

to collect eggs for me ; but it being somewhat late in the season, I did not expect him to get many. He sent me by post a number of plants which I saw for the first time, but said that his greatest contributions were yet to come. I was on the tiptoe of expectation, not knowing what to expect, but anticipating great things. At last a letter came, informing me that he had obtained the skin of a hedge-hog as well as one of a stoat, and a "gam's" and a gull's egg from Lundy Island ; a quantity of eringo, both of the plant and of the root ; and a great lot of small eggs, of which I should find a list enclosed. They were all packed up in a little hamper, and left, addressed to me, to the care of a friend in the town, at whose house I accordingly found them.

This being the first hamper I ever opened, I shall never forget it. There was nothing broken, and some specimens really appeared to be of considerable value. Several had been brought from the south of Europe, and were at that time rare in collections ; among which were eggs of the roller, the bee-eater, the hoopoe, and the chough ; and a number of small eggs, the names of which I cannot now ascertain. One thing was certain, that my glass-box would not hold all my eggs. I bethought me of a large wash-hand-stand drawer, into which my new specimens as well as my old were forthwith

transferred, and looked, I thought, very pretty. My most curious specimens were carried to the bird-stuffer, who thought most highly of them, and endeavoured to induce me to part with them, either by sale or exchange. But I was not long destined to have them, for, in carrying them in the drawer down-stairs, my foot slipped, and I fell over it, emptying it mostly over the banisters, and only three or four specimens remained unbroken. This appeared to me at the time an irreparable loss, and discouraged me from collecting eggs for some time.

On visiting the shop of the bird-stuffer some months afterwards I related my misfortune, which I then estimated at several pounds' value. He condoled with me on the loss of my eggs, and presented me with about a dozen species to begin my collection anew, which has ever since that time continued to grow; but my scientific studies were destined to receive a new impulse in a contrary direction.

CHAPTER III.

A Lecture on Chemistry and its Effects.—My Electrical Machine.
—A Transit of Mercury.—The Fifth of November.—Magic
Powder.—Self-denial : its Advantages.

THE first lecture on chemistry I ever attended was given by an old man who had lost his teeth. It was a very lame affair, and was illustrated by experiments that were not brilliant. The attraction of gravitation was illustrated by a good model of a cart, which moved up an incline ; and capillary attraction by a lump of sugar, which being saturated with brandy, was popped into the old gentleman's mouth, at which a burst of applause from hob-nailed boots followed. He exhibited some experiments with gases of greater or less interest, but which were, owing to his want of skill in manipulation, but partially successful. However I was stimulated to attempt some chemical experiments myself, the first of which was the “lead tree.”

I was told in an old book to dissolve half an ounce of sugar of lead (acetate of lead) in a pint of water, to filter the solution (which I did not do), and to

suspend in it a piece of zinc wire by a thread attached to a cork. I found no difficulty in buying the sugar of lead, and in finding a clear pickle-bottle, but I searched all the shops in vain to find zinc-wire, and was told that a piece of sheet zinc would answer every purpose. This I procured, and placed in a bottle, when, lo, it became immediately covered with bubbles of hydrogen gas from the decomposition of the water, and little grey, mossy-like tufts gradually grew downwards from the zinc. The next morning my tree was so far complete; the entire surface of the zinc was covered by this mossy, spungy substance, which was ornamented by spangle-like crystals of bright lead.

I had thought that the glowing account given in the book, of the beauty of this experiment, might be exaggerated, but found I had been mistaken.

My mother had purchased the series of rudimentary works on science published in Chambers' Educational Course. The volume which most interested me was Reid's "Introduction to Chemistry," which was as little fitted for a young student as any work I afterwards met with. There were, however, a few experiments which I could perform. I longed for superior works, but none of my friends possessed them; neither did I find any little advice I then got of much use.

I borrowed Mrs. Marce's Conversations on Che-

at that time against books written by ladies I had confidence in them. *and the inaccurate character of many of the science are uninteresting, and convey information in a very inaccurate manner. They abound in technical details, which afford little amusement to the student, and from bad arrangement are little retained or grasped by him.* Had Fownes's "Manual of Chemistry" fallen in my way at that time, it would have been indeed a treasure. The four volumes of "Thomson," which I borrowed some years after, were read with great interest.

There were but few chemists in the neighbourhood worthy of the name. Mr. Jay, a wealthy amateur, much addicted to physical science, was reckoned the best analyst in the town, and gave frequent lectures on scientific subjects. I attended one on electricity, and being much struck with the brilliant experiments, at once set to work to make an electrical machine.

I cut up a child's mahogany table, which was broken and useless, and with the aid of nails and glue formed supports for a large quart bottle, which I made to revolve by a winch. This rubbed against a piece of velvet, which had been coated with the

usual amalgam. I set my machine in motion, and to my delight observed sparks; but I required a conducting-battery to receive them. This I formed of part of a tin dust-pan, through which I drove a quantity of brass nails, and supported on a hoop-stick, cut short. My whole apparatus, for the sake of insulation, stood on four beer-bottles, which being short and stout, were very steady. I borrowed an electrical discharger, and proceeded to make a Leyden-jar with tinfoil. This was no difficult matter, but the foil was not very neatly put on.

I had now every prospect of being able to perform some of those experiments which I had seen at the lecture. I had charged my Leyden-jar, and discharged it with the "universal discharger," when in turning my winch somewhat unsteadily, the neck of the bottle split, and I could not get another of the exact dimensions to fit my supports. My electrical dreams were at an end.

About this time I witnessed that very rare astronomical phenomenon, a transit of Mercury. Our next door neighbour was somewhat of an astronomer. He had two eyes, one was a natural optical instrument, and the other an artificial one. With the first he enlightened, and with the second he imposed on the public. His wife—an heiress—was in a similar predicament; but this was perhaps for his advantage, it enabled him the better to get to "the

blind side" of her. This neighbour spent much of his time in the study of optics and electricity. He made optical instruments of turned wood, and telescope cases of old newspapers, and considered himself so fortunate as to have constructed in this way some of the grandest instruments in the country. He gave us due notice of the coming transit, which we saw from his bedroom-window in the middle of the day with the aid of his reflecting-telescope. A small dark spot, the size of a pepper-corn, was seen to pass over the sun's disk; the day was clear, and the transit was as well seen as could have been desired.

The Fifth of November was a general holiday in the schools. Almost with the break of day, the explosion of crackers and squibs resounded through the air, and boys and young men were busily engaged in preparing for that great occasion, which was looked forward to throughout the year, and some boys saved their pocket-money for months, with a view to take part in its celebration. My friend Alfred was more devoted to squib-making than myself, but one year I assisted him in ramming about fifty squibs. I excelled at that time in the making of blue, green, red, and purple fires, which on one Guy Fawkes' day cost me a whole shilling. Cannons were in great vogue, and were, in many cases, crammed to the mouth.

There was one experiment which I was particularly fond of showing. A small quantity of loaf-sugar and chlorate of potassa was carefully pounded together, and a drop of sulphuric acid was let fall on the mixture, which at once inflamed, diffusing around a strong odour of chlorine. This was viewed with great interest by my young companions, and was by myself adapted to the firing of the cannons, for this mixture was put on the touch-hole, and a stick dipped in the acid applied, when the compound burst into a flame, which it communicated to the gunpowder. My experiments in chemistry much pleased my companions, who on many occasions urged me to perform them. The substance they liked best after gunpowder was phosphorus, which applied to the face, communicated to it, when viewed in the dark, a most luminous appearance.

The "fountain of fire," produced by a combination of zinc, phosphorus and sulphuric acid was often repeated, as was the decomposition of water by potassium.

My allowance of pocket-money was small, and my requirements for my numerous experiments great : I had recourse to a plan which I had long contemplated, that of self-denial. What could I do without, the cost of which, added to my resources, would increase them to a material extent ?

I was brought up in a plain and simple manner,

but surely possessed many things which the children of the lower classes had not, and yet they were stronger than I was. There were two articles which, although very fond of, I thought quite unnecessary—to me at least; the first was butter and the other sugar. I explained to mamma that I should be just as well without these things. I had some difficulty in convincing her of this, but on urging the subject repeatedly for more than a fortnight, she at length yielded, and, at my desire, agreed to allow me the cost for my experiments, which was then estimated at one shilling weekly. For years I persevered in this self-denial, with occasional intermissions, and to it I attribute a great measure of the control I now have over my appetites. The money at that time was certainly of vast importance to me, for by it I was enabled to commence researches, and perform experiments, of which after the lapse of so many years, I still feel the benefit.

I devoted myself to the analysis of the common objects which surrounded me, the clays, the spars, the ores, the water, and the plants. These studies occupied me greatly from my tenth to my fourteenth year. I became at last comparatively indifferent to the society of others, finding so few that I could sympathise with in my pursuits; and having very few books, I was thrown on my own

resources for the solution of my problems. I learned the art of working glass, which was of the greatest use to me in making those elaborate vessels so necessary in organic analysis.

CHAPTER IV.

An Excursion in May.—Sentimental Impressions.—The Song of the Blackcap.—A Story from Pictures.—The Patagonian Rabbits.—Experiments with Garlic and Wood-sorrel.

My tenth birthday opened as a fine day in May; it was long looked for in connection with a visit to the woods on Stoke farm, a common resort of picnic parties. The distance being between two and three miles, was considered beyond our walking powers; so we got into a chaise and were conveyed without fatigue to the scene of our pleasures.

It was a fine season, and vegetation displayed the glowing precocity of a youth of genius. We alighted on the green sward and entered a copse; the Harebell (*Hyacinthus non scriptus*), the Primrose (*Primula vulgaris*), the early Purple Orchis (*O. mascula*), and the Cuckoo-pint (*Arum maculatum*), burst on our eyes in such luxuriant profusion that they appeared to have been gathered by kind nature from a large area. We separated, taking different directions in the little wood.

It was not to me unexplored territory, but I had

not seen it at this sweet season of the year. I passed a clear brook over which hovered swarms of gnats; on my right hand was a hawthorn hedge in full blossom, and at every breath of wind a shower of blood-stained snow fell on the mossy bank beneath. A few yards further the trees were very dense, and there I found a stone, on which I sat to count my flowers. I heard a bubbling further on, which led me by its gentle voice to a little pool about six feet wide, fed by a small stream of water. It was shaded by a fine oak, and a natural wall of rock, about ten feet high, bounded half its extent. The rocks were rugged, but from their surface a luxuriant crop of ferns and mosses grew; shaded from the sun, they displayed those delicate green tints which live not in the bright light.

The water was deep, cool, and refreshing, and as it poured down the broken leaf of a Hart's Tongue fern (*Scolopendrium vulgare*), I tasted it.

I was in a contemplative mood, and having the whole day before me, I was not inclined by rude haste to destroy the more delicate of my pleasures; for, living in the neighbourhood of a large town, the solitude of the present moment was seldom enjoyed.

I had made a vow to obtain, if possible, that summer some knowledge of the song of birds, and this was one object I had in visiting the wood. The

Blackcap (*Sylvia atricapilla*) greatly abounded here, and I soon heard its song, and noticed its silent motions on the hawthorn hedge. Alfred, who was of the party, now joined me, and exclaimed, “Mamma and I have been listening to the Nightingale” (*S. luscinia*). “But hush, Alfred,” said I, as the bird began to pour forth its most touching strains, “that is the bird; if you are still a minute, you will see it.” And the little bird did show itself, and hopping past us alighted on one of the high branches of the oak; where, invisible, it still maintained its song. Alfred ran to fetch his mother, for she had heard the voice, but had not seen the bird that uttered it.

Her hands were full of plants, and a boat-shaped basket was overladen with treasures. She was enraptured with the beauty of the pool, for she loved nature without being poetical,—and as a part of it, the song of birds.

We described the bird to her that was singing so delightfully. She was certain that it was the nightingale, and I was equally positive that it was not. “The nightingale,” said I, “is a greenish brown bird, with a light-coloured breast, while this is a grey bird with a black head.” Just then it flew from the oak, and she saw its colours. “This is surely,” she said, “a blackcap.”

I examined her basket of flowers, and found

several that were strange to me. There was the Wood Sorrel (*Oxalis acetosella*), with its red, jointed, creeping roots, trefoil leaves, and white, delicately-veined blossoms. There was the Wild Garlic (*Allium ursinum*), the Yellow Weasel-snout (*Galeobdolon luteum*), and Marsh Red-rattle (*Pediculus palustris*). These, she said, were to be found in abundance; and, under her guidance, I had no difficulty in a few minutes in filling my basket with spoils, from the extensive natural beds of these species in the marsh, the shaded underwood, and the open glade.

In my various botanical excursions I generally remembered the useful as well as the purely scientific, and having a trowel with me, I dug up about a dozen bulbs of the garlic for domestic use, and I gathered a supply of the wood sorrel for analysis.



Orange-tip Butterfly (*Anthocharis cardamines*).

In the open glades I noticed a small white butterfly in considerable numbers. Its flight was most peculiar and heavy, although its wings were shaped

like those of a dragon-fly. Having a butterfly-net with me, I captured several; they proved to be the Wood White (*Leucophasia sinapis*), which I have never since seen in such abundance; the Orange-tip butterfly (*Anthocharis cardamines*) was also very common. I was delighted with its brilliant colouring on the surface, and delicate green marblings underneath, and thought I had never seen so pretty a butterfly.

In the wood we stumbled upon a snake, which appeared as anxious to avoid us as we were to avoid it. I had not yet learned to distinguish the viper from the snake.

At two o'clock we assembled for our lunch in the parlour of the farmhouse. It was a moderate-sized room; in one corner there was a three-cornered cupboard, whose glass door gave an inviting peep of cracked china. There was a sofa, the springs of which were apparent; but there were five paintings which, to my mind, atoned for every defect in the furniture; they were by an early Spanish master, a poor colourist, but a most vigorous and expressive draughtsman. They formed a series in evident illustration of a story.

The first represented the chamber of a letter-writer, who, seated at a table, listened attentively to the suggestions of a handsomely dressed lady, whose countenance was plain, and marked by

anxiety. The second picture represented the reception of the letter by a handsome young man in a grey coat. A young woman in a red dress, and an old woman in a mantle, were giving way to violent transports of grief. The third picture represented a hunting scene; the man in the grey coat was on horseback, and the lady in the first picture was wishing him good-bye at the gate. The lovers were clearly married. In gloomy dejection the old and younger women were passing in the distance. A fourth picture represented a grand entertainment given by the lady and gentleman to some person of great distinction. The costumes were those of the age of Ferdinand and Isabella, of whose reigns Washington Irving's "Conquest of Granada" had given me a good idea. The fifth picture represented the old couple sitting in a chimney-corner; —arms and helmets hung in the room, dogs basked by the fire, and a Sancho-Panza-like figure presented wine on a silver tray. This picture was far superior in preservation and colouring to the others. It was somewhat ill-lighted, and required some study fully to comprehend, but it grew on the imagination to such a degree as I gazed, that I fancied I was in the old hall, and heard the soft Castilian accents of the serving-man; observed the stately nod of the antiquated dame, and felt the old hound lying at my feet. There was a tinge of gold over

the whole picture which suited a representation of a stately palace of the bright age of the "Catholic Ferdinand."

"Come and see the rabbits," said Alfred, at last. "What are you dreaming about?" So he dragged me out to the farm-yard, where the ducks were paddling in a pool formed by the refuse water of the house. In a dark hole of a shed we were shown the rabbit-hutches, and with the aid of some green leaves we soon brought the animals to the gratings. The largest, a yellow buck, was of the enormous weight of thirteen pounds; his wife was black, and weighed only about one pound less. He was tolerably good-natured, and would allow himself to be lifted by the ears; but she had an awful temper, for at the least touch she would grunt, stamp, and attempt to bite.

In these rabbits we had an example of the evil of the alliance between fair-haired and black races, for their progeny were far inferior to their parents.

This excursion was long remembered, and formed a chronological epoch in my early history; things were described as having happened either immediately before or soon after this eventful day.

I was somewhat laughed at for bringing home so many bulbs of garlic, and was anxious, in self-justification, to turn them to some scientific purpose. I had by this time a fair assortment of chemical

apparatus, and among them that important utensil a Wedgwood mortar. I had an old recipe book, which, after relating the most approved method of dyeing ribbons with logwood, and describing medicines for the cure of spring and autumn complaints, gave a supplement of chemical experiments. After many warnings and suggestions to care, on account of the expense and deadly character of some of the chemicals, it proceeded to detail the secrets of common life; how sugar could be made from carrots, wine or beer from turnips, spirit from potatoes, and how onions were anti-magnetic.

This last fact made a deep impression on me. I confess I did not believe it, but longed to try the experiment. At that season onions were scarce and dear, and I had no way of trying the experiment; but a new light broke on me when I saw that luxuriant growth of garlic.

My dozen bulbs were reduced to pulp, but with great labour, and some tears, for the odour of these bulbs had a most irritating effect on the eyes. My pulp was put into a cloth and squeezed, and the resulting liquid poured into a bottle, to which I added about a fourth part of spirit of wine. The stench during this progress was very great, and there was much difficulty in eradicating it from the vessels. The cloth in which the bulbs were squeezed, being supposed by me to contain the greater portion

of their volatile oil, was partially dried, and then put into a wide-mouthed bottle with a little spirit; this I long preserved, together with the juice.

We were homœopathists, and dispensed the contents of the little tubes ourselves; these, when empty, I always claimed, and filling them with chemicals of various kinds, I boasted that I could hold half the elementary series between my finger and thumb.

One of these tubes being carefully 'cleaned, was half-filled with the garlic juice, and a small needle, highly magnetised, but broken in half, was introduced into it. I noticed that my needle became jet black and very brittle after a few days, and lost its lustre, as well as its tenacity; it had also quite lost its magnetic power. I was much delighted, and hastened to try the experiment on a much larger scale. I immersed a sixpenny bar-magnet in my tincture of garlic for some weeks; but although the steel was blackened, yet its attractive power was not lost. I came to the conclusion, therefore, that the sulphur, which forms an important ingredient in the oil of onions and garlic, had reduced the needle to the condition of sulphide of iron, which is not magnetic; but the surface of the magnet, in the other case, was alone corroded by the sulphur,—or had become sulphide of iron, being not sufficiently thick to form a perfect insulator.

I had been told that wood-sorrel was the source of oxalic acid, and anxious to verify it I pounded my leaves, which filled about a quart measure, in the Wedgwood mortar. This occupied a great deal of time and hard work; but I had the assistance of Alfred and two other friends.

I put the whole into a basin, and poured over them a quantity of water. I got a green solution, with a sour taste. How to evaporate this was my next difficulty. I had a large and thin white china dish, which originally had a gold rim,—but this, time had obliterated. I put it in the oven with my decoction, and after being there three or four hours, I was delighted at seeing, under a quantity of green scum, a pasty mass. I removed as much of the scum (*chlorophyle*) as I could, and pouring a very small quantity of hot water over my residuum, I transferred it to a piece of filtering paper, on which I had sprinkled a small quantity of wood charcoal, ground to about the fineness of coarse gunpowder. This paper I placed in a little glass funnel, and to my joy perceived that the liquid which trickled through was beautifully clear, and almost colourless.

As this was my first attempt at filtering with charcoal, words can hardly describe my feelings. I had soon about two table-spoonfuls of intensely sour liquid, which after a few days I concentrated still further in a small Berlin ware evaporating dish,

over a spirit lamp. On putting the liquid to cool I observed a white scum collect on the surface, and to my great joy perceived little crystals form ; these I lifted out on a slip of glass, observed their peculiar form, and placed them to drain on filtering paper. I rushed to tell mamma that I had extracted the “salt of sorrel,” or binoxalate of potassa !

CHAPTER V.

Turning Lecturer myself.—A Violent Explosion.—My Lessons from “the Doctor.”—A Visit from Mr. Combe the Phrenologist.—The Tutor; his Flirtations.—Exchange of Specimens.—New Young Companions.—Boat-building and Birds'-nesting.—“King Coal,” the African Prince.

My friend Edward having lately attended a series of lectures on chemistry and optics, was so full of what he heard that he could hardly refrain from lecturing his companions on these subjects, mimicking the lecturer’s manner, and giving copious quotations from all he heard. His loquacity and assurance at first gained him a few listeners, but he had so little understanding of the subject he spoke of, that apart from the quotations there was nothing in what he said.

Having now studied chemistry for more than a year, I felt a strong impulse to use my knowledge for the benefit of my companions. I therefore announced that I would give a lecture on the ensuing Wednesday afternoon on chemistry, illustrated with experiments.

I made considerable preparation, collecting a large

series of bottles, tumblers, and glasses, and my indefatigable Wedgwood mortar. I arranged a black board, on which I wrote on one side the names of the four elements of the ancients, and on the other the modern series. My young friends assembled, and several elderly persons,—parents and friends.

My friend Alfred was in “the chair.” I opened my lecture by stating that the inaccurate and loose division of the ancients into four elements would not now “hold water,” but that modern science had substituted an arrangement of upwards of fifty elementary bodies. These I described, and of some of them I exhibited specimens, and read long lists of their combinations, specific gravities, and equivalents. I proceeded to show one or two experiments with gases. Taking up one of my implements, I said, “This is a tobacco pipe; it is filled with small coal, and the mouth is stopped with clay; I now place it over a spirit lamp. Ladies and gentlemen, watch the result.” A little green smoke was soon seen to issue from my “half yard of clay.” “This,” said I, “is impure carburetted hydrogen gas. To prove this to you, I will inflame it.” So saying, I brought it in contact with a lighted candle, when it burned for a few seconds. I spoke of the properties of the other elements, and proceeded to make chlorine, by heating in a retort, binoxide of manganese, and

hydrochloric acid. This I collected in a bottle of warm water, inverted over a brown basin of the same; but some of it escaping into the room, occasioned coughing, and one old lady said, "Take care what you are about, you will poison us all!"

I was anxious to show the characteristic flames of the nitrate of baryta, strontia, and boracic acid,



Lecture on Chemistry.

and was accordingly pounding somewhat briskly in the mortar a considerable quantity of nitrate of strontia, sulphur, and chlorate of potassa, when the whole contents of my "Wedgwood" suddenly

exploded ; the pestle was torn out of my hand, and reached the roof of the room, and a hot and red flame blazed for some seconds in the mortar, obscuring my figure in volumes of irritating smoke, out of which I came with my arm and shirt-sleeve burnt. The windows were thrown open, and the audience, some screaming and some laughing, dispersed, and I found it impossible to collect them again ; but one of my companions, whose name was George, proposed that we should finish the afternoon with a good game of cricket, which, finding favour, occupied us till tea-time ; and so ended the day that saw my first appearance before an audience.

My mother being anxious that I should make rapid progress in my various studies, placed me as private pupil with the Doctor, whose house had been so attractive to me. I went every day for an hour or two, and received instruction in Latin, English grammar, and natural philosophy.

The Doctor's residence was an interesting old manor-house, probably built in the reign of William III. Oak panels lined the principal rooms, and there was much quaint carving about the house. This formed the subject of reflection on my part, for in my imagination I would often conjure up a vision of its former inhabitants, and of the splendour of other days.

I was sometimes taught in the Doctor's study,—

a little oak-paneled room, lined with books. It looked out into a three-cornered court, round which there was a nice balcony, with a perambulatory below. At other times I took my lesson in the dining-room, but was so often disturbed by visitors that I made little progress.

The Doctor would chat and tell amusing stories to his lady friends when I was learning my lessons, which to one of my tastes and lively imagination was distracting. He generally ended by saying, "This is my favourite pupil. Won't you drink Mrs. Bounce's health in a glass of wine?" He would frequently ask me to show the ladies over the museum, which was more pleasing to me than "*propria que maribus.*" On one occasion I lost my entire lesson, for the Doctor was detained with visitors.

I sauntered into the museum, and began studying the minerals, when the Doctor entered with a gentleman in a brown coat, having a long and pale face. He took him to the various cases, and pointed out the more interesting objects.

"This," said the pale-faced gentleman, "is what I thoroughly approve of, and only wish it were more generally adopted."

At that moment the Doctor caught a glimpse of me. He beckoned me to him, and said—

"Here is a gentleman who would be interested in you. This is Mr. Combe, the phrenologist."

He was a somewhat cold and dry sort of man, not attractive to most children, but he interested me much.

"Mamma," said I, "talks about you and your science, of which she heard much in Edinburgh."

Mr. Combe patted me on the head, and said something to the Doctor in an under-tone of voice. They soon after left. The next day the Doctor said—

"Mr. Combe was much struck with your appearance, and gave me some very good advice about you, which perhaps I shall tell you of some of these days. But come on; give me your Latin grammar."

For about a week the Doctor was unwell, and his tutor took his place. The tutor was a much better instructor than himself, and I got on much better. But he was a great flirt, and there was a lady in the house, a "woman in white," with whom he was on cordial terms. "Frank" was a frequent ejaculation through the half-open door, during my lessons, with or without the accompaniment of a section of a slight, bobbing female figure.

At last, Miss Martha came bodily in. She was evidently a good deal older than the tutor, but her complexion was as fresh as a peach. She talked to me, and Mr. Frank went out of the room.

"Miss Martha," said he to me, "will hear you your lesson."

"Don't be long, dearest Frank," said she.

She had got about one-half through it, when at the cry of "Martha!" she started up, and in her hurry overset the table on which were my books, and the ink, which fell over her light-coloured dress.

Frank was next called, and hurried away for chemicals to extract the ink.

"Tell Miss Martha," said he to me, "the chemical composition of ink, the best means of making it, and the best means of extracting it."

"Ink," said I, "is a compound of tannic and gallic acids, with an oxide of iron. It is usually made by mixing an infusion of galls with a solution of sulphate of iron; sugar, salt, brandy, and gum-water are added; the mixture is next well stirred. Oxalic acid is the best thing to extract ink."

"Do go and get us some from the chemist's, for I find we have none," said he.

I got the acid, but had no more of my lesson.

The Doctor had a garden of considerable extent, the plants of which were arranged according to the system of Linnæus, and carefully labelled with the English and Latin names. This was to me a most interesting place, to which the Doctor on Wednesday afternoons would sometimes take me. I would gladly go without my dinner, and wait in the museum until he was done with his, for the walk in the garden.

Feeling greatly indebted to the Doctor for the

privilege of studying in his garden and museum, I wished to make him as much recompense as possible. I noticed that some of the dried plants in my collection were not in his cabinet, and I accordingly brought them for his acceptance. He had a large quantity of duplicates of minerals, which he said were useless to him. Of these he permitted me to take as many as I wanted, so our accounts were squared. When I caught two butterflies or two moths of a handsome species, I generally brought one to the Doctor, with whom I was now a firmly-established favourite. His personal instructions were much less valuable to me than the books which, opened on the sly, afforded me much insight into the secrets of nature ; and his apparatus, which was the means of rendering clear, much that I found obscure in mechanics.

My friend Johnny being now at a large school, had many companions, some of whom he introduced to me, and to these I added several slight acquaintances of my own making. There were John and George, brothers ; there were Sam and Searle ; but none of these had really nice dispositions. John was coarse and licentious, George was given to petty lying and thieving, and his conversation was low, although his connections were more genteel than those of most of the other boys.

Sam was a decidedly vulgar boy whom we always

despised, but whose acquaintance was found useful by the rest. He was of a commercial turn, and if anything was to be sold, such as the produce of an apple tree, fowls, rabbits, toys, or bottles, Sam was the medium, for which he generally exacted a commission.

Sam was an ingenious mechanic ; carving of all kinds he understood, and the making of models. Thus he cut out of beech-wood the complete implements of a farm—such as ploughs, harrows, thrashing machines, and other tools, which would work, especially his plough, the shaft of which, hardened in the fire, would turn up the ground very well. This he used in making the furrows for sowing mustard-and-cress seed.

Although about six years older than myself, he was far behind me in mental activity, but was interested in viewing some of the chemical experiments I performed. In exchange for chemicals he supplied me with pieces of wood drilled with holes, according to my instructions, for the support of test tubes and retorts ; but the sublimer truths of chemistry his gross and material mind could never fathom.

His companions envied him the possession of a large cannon which carried a half-pound ball. This he valued at five shillings, at which price it was long for sale.

An old woman who used to work about our house,

had for her second husband the boatswain of a man-of-war. In his leisure hours he had constructed several model boats and ships, one of which was shaped out, but not made hollow. This block of wood she brought to me, and I at once proceeded to rig it as a ship of the line. With much care and some expense this was at last accomplished.

This first essay of ship launching was the occasion of a considerable gathering of boys from all parts. She was launched, and went off gallantly for the first yard or two, when she tipped over, and although frequently righted, always capsized. Something clearly was wrong. She had a small keel of lead, but was not sufficiently light on the deck; so she was at once unrigged and hollowed out with gouge, chisel, and red-hot poker, which was a work of time and difficulty. She was at last decked, re-rigged, and launched—this time successfully.

Tempting offers for her purchase came. These I declined, but was at length destined to be tempted beyond my powers of resistance.

One of the boys most interested in the launching of the vessel was a new acquaintance called Billy. He was a big-headed, lumpish, goggle-eyed, clownish boy, devoted to birds'-nesting, nutting, blackberry gathering, and games, but indifferent to science or study. Having been brought up in the country, he had a more extensive knowledge of the habits of

animals than any of the other boys. He could see a nest where no one else could, and catch fish with great facility.

Soon after my tenth birthday, Billy, Alfred, Sam, and I took a long walk. We gathered many plants, but our special attention was devoted to birds' nests. We found several empty sparrows' and linnets', and one full of young thrushes, which being just hatched, we left with the intention of visiting them again.

We were returning without spoils, when Billy, cramming his hand into a haystack, exclaimed he had found a nest, which he pulled out. It was made of sticks and straws, and the little bird was sitting on her six eggs; she pecked at his thumb, and he caught her. It was a creeper, and the eggs were richly marked, and of a beautiful flesh colour, with bright red spots, and altogether formed one of the prettiest and most pleasing objects I had yet seen. He let the bird go as he was a kind-hearted boy, and we returned flushed with excitement.

I was anxious to add this specimen to my collection, and perhaps appeared too eager for it. Billy saw my zeal, and resolved to turn it to his own advantage; nothing else but my "ship of war" would satisfy him. My other companions thought this a monstrous request;—"a nest and eggs at the most worth sixpence, for a fine rigged ship worth five or ten shillings!" But Billy had found my

weakness, and so the ship changed hands. The eggs were, however, so incubated that I could only blow two of them. I much regretted my precipitation, for by it I missed the opportunity of performing several experiments in ship-building, for which the possession of a craft of more than two feet long gave me great advantages.

Sam had cast longing eyes at the ship, and knowing Billy's fondness for powder, showed him the big cannon, for which Sam at once obtained the ship. Sam made some slight improvements in her, and to our great astonishment sold her for 12*s.* 6*d.* to the son of an African king, who boarding in the neighbourhood for the receipt of a sound English education, was allowed £1 a week pocket money, which we thought a most desirable, but at the same time fabulous, amount.

This young man, when flush of money, would buy almost everything brought to him, from a basket of apples to a puppy dog. He was a stupid, dissipated, good-for-nothing fellow, who spent his time and his money in the worst possible way.

His father having assisted in the capture of a slaver, obtained prize money to the extent of some thousand pounds in value ; and intoxicated with the magnitude of the sum, he at once consigned ivory, beeswax, and palm oil, to the extent of some hundred pounds in value, to be sold for the benefit of his son,

who had by this time acquired the *soubriquet* of "King Coal."

King Coal, on this great acquisition of wealth, resolved to give a feast to his young companions. These being very few in number, he invited them to bring their companions, which they readily did, and so more than a hundred boys and young men were gathered together. A large marquee was erected in a field, and games of cricket, rounders, and football commenced. The *fête* began about eleven o'clock in the morning, and lasted until about the same time at night. There was a band of music; wine, beer, and lemonade without stint, a roaring good dinner at four o'clock, a dance at seven, and a supper at ten.

"King Coal" strutted about, wearing white trousers, a bright green coat with solid gold buttons, and a lofty chimney-pot hat, his hands in his pockets, and a tremendous cigar in his mouth. He was now called "His Highness," and appeared thoroughly in his element. He endeavoured to induce as many of the boys as possible to exceed in wine and beer, and was successful with poor Sam, who at an early hour of the evening stretched himself on a packing-case and slept.

I was not present at this "explosion," but it was the subject of conversation for the next twelvemonth. It had evidently a most demoralising effect on the

boys; they now thought of little else but endeavouring to get money for smoking, drinking, and other vices, in order that they might be like "King Coal," and some even resorted to dishonourable means for attaining the "needful."

CHAPTER VI.

My falling into Bad Health.—Finding a Treasure in a Field.—
My turning Doctor.—Insect Collecting.—A Fight with a
Girl.—My Musical Compositions.—A Practical Charade; a
Matrimonial Auction; Sensation amongst Widows and Spin-
sters.

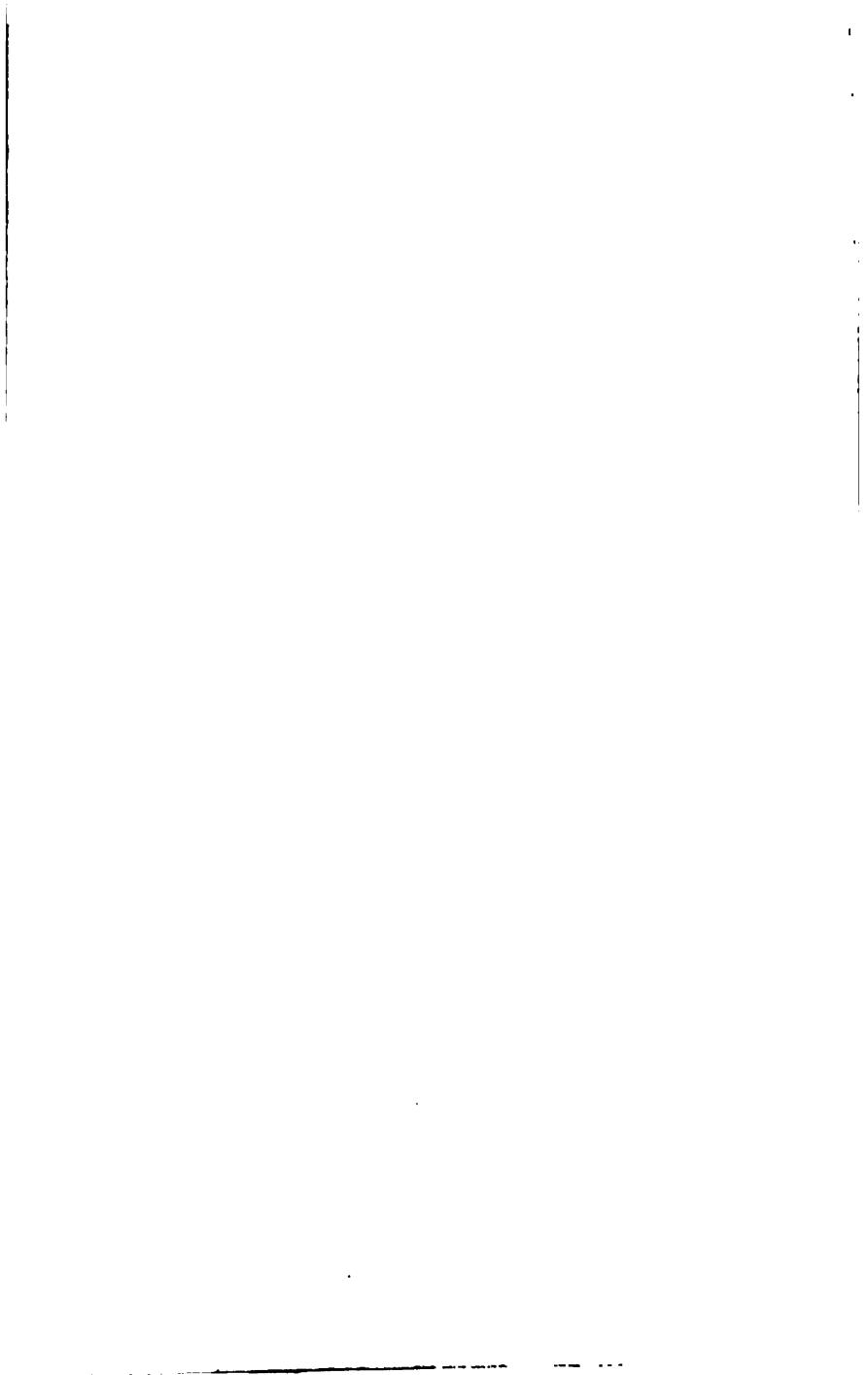
My health, which had been delicate for the last two years and a half, now began to be decidedly bad. My studies were intermittent, and I was obliged to avoid violent exercise; after which I had most unpleasant symptoms. But my mind was increasingly active; for, although my studies were many of them nominally suspended, my thoughts burned with an intensity not to be checked. My intellectual activity and vivid imagination were doubtless the cause of my delicacy. My mind was full of gigantic schemes, which were little influenced by my capacity for their execution, until, wearied with them, I turned for relief to practical science, and trusted that earnest perseverance in the path I had traced would give wings to my resources: and I was not mistaken. “Nature never did betray the heart that loved her.” But the conflict between the desire to do, and the

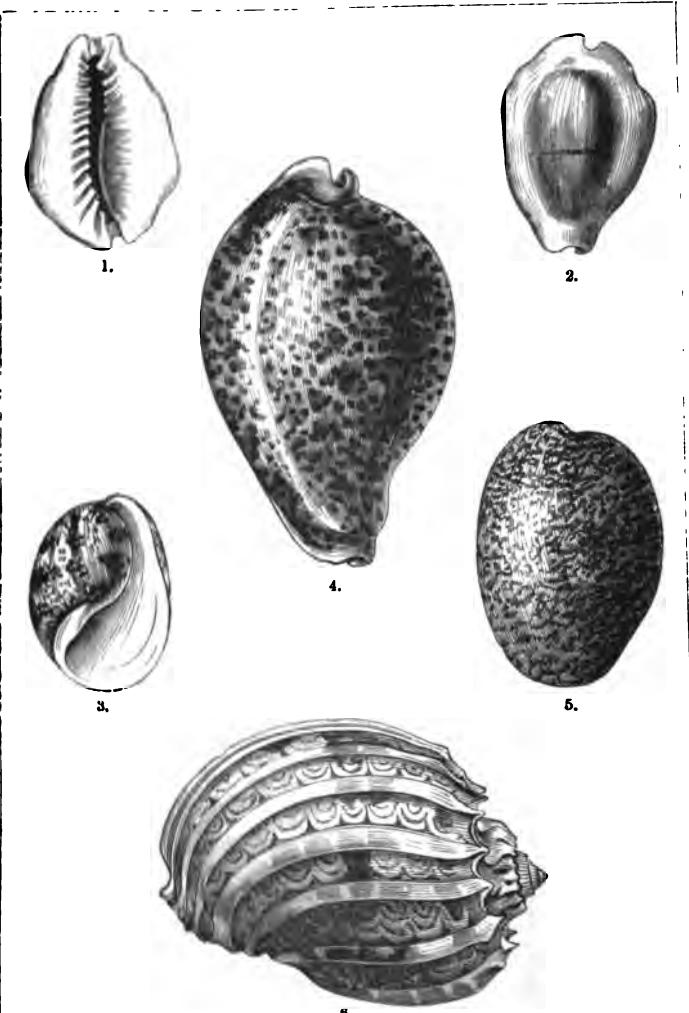
power of doing, wore me for many a weary year down to the earth. The cord of life was not cut, although strained—and time indeed wore heavily with me. Gradually one fetter after another loosed, and the captive was at last free. But I must not anticipate events any further, but return to my eleventh year.

My ill health did not prevent the analysis of many substances, and other chemical experiments. I should have been starved without this “food for the mind.”

In digging for dandelion roots for making coffee, I came upon a large mass of white shining mineral, which I at first thought was gypsum, but which turned out to be an ore of lithium. This was unknown to me for some time, but thinking it of value, I had the prudence to collect about twenty-five pounds’ weight. At last I got the name of it from an intelligent chemist, who assured me it was worth about sixpence an ounce; and offered to purchase my whole stock at half that sum, or give me chemicals in exchange. I at once closed with the bargain, and in this way supplied myself with what I thought at that time a most extensive assortment of rare ores for analysis, blow-pipes, test-tubes, and dozens of bottles full of tests and re-agents.

Taking a great interest in medicine, I procured several works on the subject, and formed a collection





MY FIRST PURCHASE OF SHELLS.

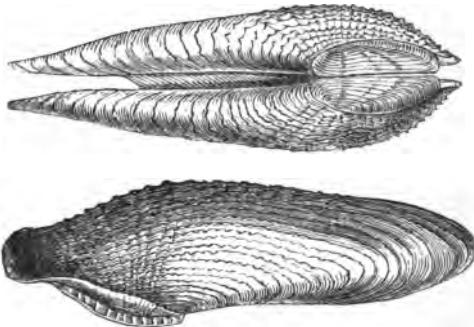
1, 2.—*Cypraea moneta.*
3, 4.—*Bulla ampulla.*

4.—*Cypraea pantherina.*
6.—*Harpa ventriculosa.*

illustrating *Materia Medica*, which comprised almost every drug in common use: bottles and pill-boxes were now by me counted by the gross. Pills and ointments were compounded with all "the art of the apothecary," and freely dispensed. I had a specific of my own for chilblains, one for Asiatic and another for English cholera, a lotion for inflamed eyes, a powder for freckles, and a "cream for removing superfluous hairs." It was at that time my intention to protect several of these inventions by patent the first opportunity. My companions came to me extensively with all their complaints, of which a large proportion were cured. The ordinary druggists' shops did not afford all my requirements, so, Culpepper in hand, I searched the marshes, the woods, and the fields, dried herbs, and pounded roots and leaves, for tinctures, or evaporated infusions to form extracts.

The discovery of this mineral had given me a vast impulse. I visited the field which was just opposite our house, but could find no more. I concluded that it had been brought there from a distance. But zoology and botany were not at this time entirely neglected, for a present of ten shillings which I received, was devoted to the purchase of a mahogany cupboard, which, filled with shelves, was converted into a shell cabinet. I collected insects, and in a year rejoiced in the possession of

about a hundred species. These were placed in boxes with glass-tops of home manufacture, and excited much admiration; but the boxes were not really well adapted for their preservation, and so my collection in a few months, in the damp Devonshire climate, became mildewed, eaten by mites and mice, and destroyed; and I was discouraged for two whole years in forming a collection. Not so with my collection of shells, which were much less perish-



Pholas dactylus.



able: it continued to grow and increase in number and value of species until, after many years, it numbered upwards of a thousand. My pocket-money was exclusively devoted to scientific objects; scarcely anything was spent on cakes, sugar, or toys, such as employ the pocket-money of most boys from eight to eighteen.

My collection was the object of some interest to

my acquaintance, who occasionally gave me specimens, and to whom I frequently displayed my treasures. Among our visitors was a lady whose younger sister, Laura, was a playmate of mine ; she was a lively, intelligent, but overbearing and spiteful sort of girl. She was quite ready to enter into personal conflict with almost any boy of her age, and a match for him in strength.

"I hear you are a good fighter," she said, one evening ; "take that!" giving me a violent box in the ear.

I was a good deal surprised and somewhat put out when another on the opposite ear brought me to my senses, and doubling my fists, I began. Laura warded off my blows pretty well at first, until a well-aimed one hit her pretty smartly on the nose. It began to bleed, and Laura began to cry and sob, and say I had insulted her. Laura was not long angry, so we parted at the close of the evening very good friends.

Some months after Laura was invited to tea ; there was a considerable gathering of parents, friends, and finery. Laura, amongst others, wanted to see my collection of shells, which being exhibited, she expressed herself pleased, and asked where this and that were obtained. Taking up a fine specimen of pholas, she said, "I admire this the most ; it is indeed a beauty. What would you

do to me if I broke it?" I said, "I should be very angry." Then said she, "Here it is!" and she smashed my finest specimen in her hand. I own not being in a good temper all that evening. I told several persons what Laura had done. Her sister laughed, and said it was just like her. This little iconoclast was afterwards developed into a furious Dissenter.

A slight acquaintance of mine was an accomplished musician; he played the organ in cathedrals and churches, and was a pupil at the Royal Academy. He was considered brilliantly gifted, and his friends all prophesied that he would become an eminent sacred composer. He was to compose an oratorio to be performed by one of the junior classes; and, anxious to distinguish himself, he devoted an immense deal of time for some months to the execution of his task. He called his piece "Absalom." There were a series of grand movements and several songs. The general plan appeared good, but the execution was monotonous, cumbersome, and ungraceful. Several faithful friends had heard it, and advised him not to risk his reputation in bringing it forward. He was seven or eight years older than myself, and a very shy, sulky sort of young man. I one day met him at a friend's house. I was asked to sing, which I did quite naturally, having never received any instruction in music. The composer

was charmed, and offered to teach me music ; "but," said my young host, handing me a book, "sing your own air to this hymn." This I did, and he was still more pleased. I had at that time extraordinary facility in representing ideas by musical sounds, which appeared as natural to me as by words. When alone I delighted to represent tales or incidents by music, although totally ignorant of the rules of composition, and too impatient to learn. My friend the composer asked me to repeat my air, and several others of my own contrivance I hummed very slowly. He made notes of them, and afterwards introduced them into his oratorio, which, being rehearsed before several critics, was pronounced now equal to the occasion. It was produced in public, and much applauded by several large audiences.

Practical charades were a favourite amusement with the young people of the circle, and were greatly encouraged by some of the elders, who considered them an excellent means for the cultivation of the mind. I was so entirely devoted to experimental science that I had at that time little sympathy with this mode of spending an evening, being much better pleased if I could turn the conversation in a scientific direction, and still more so if I found so fine an opportunity for demonstrating by practical illustration "the philosophy of common

things." Had we been living in Edinburgh this might have found more favour; but the heavy Devonshire atmosphere promoted lethargy of the intellectual and higher faculties, which demanded some less healthy stimulus to awake them to life. A solemn conclave of young people was held in the school-room, when it was determined that the next Saturday evening, ere the youngsters were resigned to their tubs, at least one practical charade should be acted. Words were a common foundation for the representations, for elaborate plays were thought to be beyond the juvenile mind. The young people who had concocted the previous charades having somewhat exhausted their stock of words, condescended to receive suggestions from me; at which I was rather surprised, as I had entered with so little zest into their previous proceedings. An idea struck me that I would contrive for them a charade containing allusions of so personal a character as to give a fatal blow to the popularity of these amusements among the governors and governesses of the circle. I proposed the word *matri-mony*: "a door-mat, you know; try, the verb; and money." This was thought to be a beautiful word, and the different syllables were assigned to the various actors. I walked home with Searle, and arranged with him his part. He being a most impudent and loquacious boy, was delighted at the

idea of having some fun at the expense of his elders. We arranged the details of the plot between us, but agreed to keep them secret till just before the play came off, lest there should be traitors or "tell-tits" in the camp.

Saturday evening arrived, and the company assembled to the number of about twenty. George was there, bringing a large carpet-bag, which was crammed with some Oriental costumes, which he thought might be useful during the parts. I took no share in the acting, but was stage-manager, lessee, and director. The first part saw door-mats manufactured by the boys, and Berlin-wool lamp-mats by the girls. The good effect of perseverance was next shown, and the song, "Try Again," sung by a pretty miss with pouting lips. A commercial exchange was next represented, where money was the object of pursuit, and where a Babel of the languages of all nations was heard, which ended in a general scramble for all the money which had been exhibited in the different money-changers' stalls. Lastly, there was a scene at the auction mart in which the different partners for life were sold to one another, Searle being auctioneer. Before the commencement of the auction the buyers, as well as those that were about to be sold, entered into conversation. Two boys, in search of nice girls, began examining the lots, and were very solemnly

reading the catalogues aloud for the benefit of the lookers-on. "Lot three," read one boy: "fine carotty-headed girl, aged twenty-six, warranted; upset price, £5,000." "Lot seven: Miss Peacock, aged fifty-two; no warranty given; to be sold without reserve." "Lot twelve: blooming maiden,



The Matrimonial Auction.

well educated and accomplished, to be sold without reserve; aged eighteen, warranted." "Lot fifteen: the only son and heir of Sir A. B.; upset price, £10,000; a fine genuine lot, and warranted." "Lot thirty-six: a portly widow, aged thirty-six; two children included in the purchase." "Lot forty:

clerk in a bank, aged twenty-eight; £200 a year to begin with; good-looking." This lot was represented by Bob, who sat on a chair, and was examined by the lady purchasers, several of whom declared their intention of bidding for that lot. "Lot fifty" was an old gentleman aged sixty-two, blind of an eye; "upset price, £3,000." This lot was represented by Billy, who had powdered his hair with flour, plastered up one eye, and transformed himself into an old man. Several of the ladies in "specs" peered at this lot, and one determined to have it, if it went cheap. "Lot fifty-one: Miss Annie Sparks, aged forty-six; pock-marked, but warranted otherwise sound; upset price, £1,500; her mother, aged seventy-nine, will be given to the purchaser of this lot; she will fetch a deal of money for old bones." The different lots were trotted out, their paces commented on; some were jeered, others praised; and finally the auctioneer rang his bell as a signal that the sale would commence. Searle, sitting at his desk, knocked down the lots, making comments for the most part intensely impertinent, but applying admirably to the lots which, although juvenile, represented seniors who were supposed to be competing in the matrimonial market.

There was much competition for some lots, but all, the auctioneer said, with a sly and significant look, were "given away." Some went very cheap, parti-

cularly the aged lots, some of which were knocked down to those purchasers who had no intention originally of purchasing them, but who were held to their bargain. These formed a great contrast to such lots as the girl of eighteen and the baronet's son, who were almost at once knocked down at high prices, to the disappointment of many would-be purchasers. Miss Annie Sparks and Miss Peacock bought themselves in.

We had lately attended a bazaar where many of the unsold lots were afterwards placed in a raffle, and in this way disposed of to those who could not be persuaded to buy on any other terms. What would do for the bazaar would be equally suitable, Searle and I thought, at the matrimonial auction ; which, being assented to, we at once arranged a plan. All prizes and no blanks. It was at first to be called a lottery, which had a more influential sound ; but as some of the company objected to lotteries on conscientious scruples, it was agreed that it should be called a raffle, when all difficulties ceased. A series of tickets were first inscribed with the prize ladies' names, and a similar set with the prize gentlemen's. The price of each ticket was 3,000 guineas, for which *notes of hand* were given. The drawing for the ladies took place in a widow's bonnet, and that for the gentlemen in a bearskin cap, each being restricted to the opposite sex. The names of the dif-

ferent winners were next called out by the auctioneer, and this closed the proceedings. The lots were led off arm-in-arm by their purchasers, and the curtain fell. A storm of indignation, which had been brewing amongst the widows and spinsters present, now burst forth; for the thrusts in the auctioneer's speech were so numerous and well-aimed, that their direction could not be mistaken. I was sitting among them heartily enjoying the sport. It was resolved unanimously that charades were not again to receive any encouragement that season, and I could scarcely contain my exultation.

CHAPTER VII.

The Artist's Studio.—Turning Connoisseur myself.—A Lesson in the Fine Arts.—Bad Fishermen.—A Model Water-mill.—A Great Fall.—My Failure in Rearing Birds.

WHEN I was about ten years old, I was sent on a message to the house of one of the principal artists of the town. I was received very gruffly, and at first was uncertain whether I should go in, but my message requiring an answer, I insisted somewhat strongly on one, and after some hesitation I was admitted. The artist resided in an old house, and was considered a very singular man. He and his wife occupied different wings of the house, and never spoke to each other except on business. I had to convey a letter to the wife, and was kept waiting for her answer in a long and dark drawing-room, which, however, looked out on a pleasant garden. I had to wait nearly an hour, and being of an impatient temperament, I was beginning to get very wearied, when a prim little maid, about fourteen, came to ask me if I would like to see the picture-gallery. I was led through a dark corridor into an immense

room which was lighted from the roof. The walls were lined with portraits and historical pictures to the number of some hundreds. Folding screens formed a sort of double lining to the room, which were covered on each side with small oil-paintings, water-colour drawings, and crayon sketches. I walked round the room several times, and looked attentively at the pictures, but saw no one. I was there at least an hour, but was so much amused that I did not mind the time. At the farther end of the room was a little baize door with a round glass pane in it. Looking through this, I observed an old man with a fringe of white hair round his face. He was painting the portrait of a gentleman, but perceiving me peeping in, he said, "Come in, little man." I had never seen an artist's studio before: it reminded me of the pictures of the temptation of St. Anthony, or of the shop of the apothecary in "*Romeo and Juliet*." There was a skeleton made into a chair, on which, if you sat, you were clasped by its bony arms. A stuffed alligator hung from the roof. A Medusa's head of colossal size was placed above the chimney-piece. Carved oak cabinets and book cases went nearly round the room, full of Limoges enamels, Venetian glass, Dresden and Sèvres china, antique locks, keys, and weapons, medals, and plaster casts, bas-reliefs, ivory carvings, and a variety of curiosities. The old man said I might look round,

and when I had done, I came to him and thanked him. "What have you seen?" said he. "Oh, the most lovely pictures, with the most wonderful china and glass I ever conceived of. That large Virgin and Child in the next room is the finest picture I ever saw. Who is it by? It is very like an engraving I have at home from Guido." The old man was interested. He said: "It is a Guido that I have just cleaned for Lord P——." The old man now went round with me. "That is a Raphael belonging to Earl E——. That is a Guerchino. That Woman taken in Adultery is by Rubens; it is a fine sketch. Those four portraits together are by Velasquez; they are mine. I study Velasquez, and am said to paint like him. I am commonly called the English Velasquez," said he, somewhat pompously. The old artist took me to a cupboard, where he showed me a quantity of old pictures. "Some of these," said he, "I am scraping away in order to discover the mode of painting pursued; others I am going to restore. I do a great deal at that, having fewer sitters than formerly" He then showed me his portraits, all of which he called "in the first style of art." I thought I had never met with such a conceited old man. He was very communicative, and gave me a great deal of information in a few words. He cross-questioned me about many of the early painters, and was much interested

in hearing some anecdotes which I had read of them. He took me round again, and pointed out the different styles of painting pursued by many of the old masters ; and taking me into his studio, he showed me how he made the ground colours of flesh and drapery, and unlocking his cabinets, he brought some of his choicest treasures to the light, and showed me the difference between ivory and bone, pottery and porcelain, and compared modern and antique bronzes. I was so much interested, that I entirely forgot the time, and on my taking leave, he asked me to come again ;—but I came away without the lady's answer. I paid one more visit to the old man, and taking one of my companions with me, he went over the gallery with us. “ Do you remember the lesson I gave you the other day ? ” said he ; and on this began to examine me, and was astonished to find I remembered and understood all he had told me a few weeks before. “ Have you ever read,” said he, “ a book called ‘ The Young Painter ? ’ ” On which he went to look for it. “ It will, I think, interest you ; and if I can find it, you shall have it. It is full of copper plates, which I coloured myself when I was a young man.” On this a lady came in to sit for her portrait, so I lost my book. From these visits I date the intense interest which I have since taken in paintings and antiquities.

Fishing, a common pursuit amongst boys, was to

a small extent followed by me. A sixpenny hazel rod, and a shilling's worth of fishing-tackle, placed me on a footing with my companions. We fished, but caught little; there appeared to be more fishers than fish at that time, at least, although salmon was occasionally caught. I was much pleased



Unio Pictorum (common in the Exe).

to observe a large fish leap one of the weirs on the Exe; this was probably a salmon.

Several artificial pools in the neighbourhood, the commencement of wells, afforded an abundant supply of sticklebacks, tadpoles, and newts. These we captured with a little muslin net, and it gave us much amusement to keep them alive in bottles and bowls of water. One of the female newts spawned, and we

were much pleased to observe the transformations. First the clear ova, with a scarcely visible black spot, which increasing gradually in size, filled the entire envelope, and appeared like swelled sago dipped in ink. These little envelopes soon burst, and disclosed the minute tadpoles, about a quarter of an inch long; next these curious creatures gradually lost their branchiæ and acquired feet. We caught newts at every season of the year, but we never found the orange-bellied and crested variety in winter; hence we rightly inferred that this was the summer condition of the creatures.

We were in the habit of visiting a series of fields connected by a path crossed by stiles; this led along the banks of the Exe, and afforded a good view of the river. There I saw the kingfisher for the first time, and heard it shriek as it flew. There were several mills turned by water power, which I had visited, and had been led by the examination of the machinery to construct model mills to turn by water. I made a water wheel about ten inches in diameter, on the same axle with which I had placed a toothed wheel of the same size. This communicated with a small toothed wheel, which was so contrived as to give motion to two rounded pieces of brick, the axis of which was perpendicular. This change of motion from the horizontal to the perpendicular occasioned me much trouble. My mill, which worked in a

small packing case, was placed under the pump to be set in motion. It worked very well, but the force expended in securing a stream of water to keep it in motion, was many times greater than that it afforded. I was at once led to the conclusion that water power to be *useful* must be natural, for the hydraulic press was never explained to me in my early days.

I was often little able to accompany my companions in their walks, for I was very weak, and they were all from one to six years older than myself. Sam had found a wren's nest, which he was anxious to take me to, as he was to gain threepence thereby. It was about half a mile from our house, and was situated at the top of a haystack, just under the thatch. As it was a very high one, we had great difficulty in climbing to the nest. Sam got up, but as fast as he attempted to pull me up he slipped and had to let go. At last, however, I determined to try another plan. I noticed a number of thatcher's skewers lying about; these I gathered, and ran into the stack about a foot apart, one above the other, and thus formed a sort of ladder, on which I now climbed with facility. We reached the nest, which I removed and placed in my cap; but there were only four eggs, a much smaller number than I expected.

We were sitting comfortably on the roof of the haystack. Sam had received the promised reward,

and was recounting different localities where nests were in course of building. "I know of a pigeon's nest," said he, "in an unfinished house, but I could not climb for it under fourpence, those bricks wear my clothes so." I said I should not mind fourpence for two pigeon's eggs. "Take care where you are," said Sam ; "hold on." Just then the straw began to slip, and I, having my nest to hold, was rather awkwardly situated. The straw continued to slide, when, to our horror, a portion of the stack separated bodily from the principal part, and on this portion I unfortunately was. I turned a somersault in the air, and came down on my head and back ; I was for some minutes quite insensible, and for some more minutes conscious of where I was, but unable to speak, and my nose bleeding freely.

Sam had got down unharmed, and seeing me lying motionless and speechless, began to be frightened, but was relieved on my addressing him as I sobbed, "Sam, I feel very ill ; can't stand, pull me up." Sam raised me three times, but I immediately fell. I had no power or feeling in my limbs ; he patted me on the back, which made me groan with pain, but I gradually felt returning circulation. He laid hold of me by the arm, and dragged me towards home. "You have forgotten the nest," said I to Sam ; he looked for it, but a great heap of hay had covered it. Sam was afraid we should get into

trouble about the damage done to the stack, which occupied him much more than my fall.

We had not proceeded above a few steps, when we met George carrying a large white basket. He noticed Sam dragging me, and hearing the cause, took hold of me by the other arm, so I was dragged home ; I do not think I could have walked. I went to bed, and, strange to say, did not wake till near ten o'clock the next day, having slept about fourteen hours. I was stiff and uncomfortable for some weeks.

George, Sam, and several of the other boys spent their Saturday and Wednesday afternoons in hunting for eggs, nests, and plants such as I wanted ; but they would never do anything without money, which Sam generally hoarded, but George expended on beer.

A pair of almond tumblers, escaped from their owners, had built under the roof of some half-finished houses. There was great difficulty in getting at the nest ; but Sam, with the aid of a block and a rope, managed to haul himself up within reach of the nest. He brought down a single egg which it contained, for which he demanded fourpence. This appeared to me an enormous sum for it, but still I was so anxious to obtain the egg that I gave it.

This summer I attempted to rear a family of red-

backed shrikes. I knew little about their proper food, but gave them bread and milk, on which they lived only a few days. I was not more successful with two young starlings, or a family of linnets. These birds in their juvenile days require insect food, an important fact for the economist. The non-success of my attempts at rearing birds from the nest stimulated me to inquire for books on ornithology, and I accordingly purchased the two first volumes of the "Naturalist Library" on British Birds. These books were very incomplete and meagre, and the descriptions of the eggs and nests either of little value or entirely wanting. No thoroughly good and cheap manual of British birds is to be found even now, although much interest and information may surely be gathered from the pages of Yarrell and other writers. The great cost of almost every work on the subject of any interest or authority, renders them beyond the reach of those who are unwilling or unable to spend pounds on a single book. And even the possessor of several of the best of these books (except Gould's) will find them far behind the progress of science; much that is well known withheld, and much that is stated either wholly untrue, or expressed in such loose language as to be of little scientific value.

CHAPTER VIII.

**My First Sermon.—Greedy Companions.—How to make Fig Wine.
—Theft of the Palings.—My last Botanical Walk with Alfred.
—Bob the Story-teller.**

SEVERAL of my companions expressed their intention, when they attained years of discretion, of studying for the Church, in anticipation of which they would sometimes, on a Sunday afternoon, read a psalm, a collect or two, and attempt a sermon ; this generally broke down after the first five minutes, and cries of “Go on, Alfred!” or “Go on, Barnaby!” were the signal for final discomfiture. At the last of these orations Barnaby was the priest, and published the banns of marriage between two dogs, which somewhat shocked Alfred and I, who, having a great veneration for things sacred, were sometimes called “parsons.” This character I generally repudiated ; but being chaffed on my inability to preach a sermon equal to Barnaby’s, I vowed, the next Sunday afternoon, to give them a discourse which would eclipse those of the previous preachers. They

all agreed to take me at my word, and three o'clock the next Sunday was fixed for the service.

George's mother was away from home, and we, anxious to avoid the interruption of seniors, determined to hold it in her drawing-room. At the appointed hour the congregation, to the number of thirteen, assembled, the odd number being made up by Emmeline, George's sister, who appeared in a white muslin jacket and lilac skirt. Billy was the clerk. I extemporised a pulpit by turning up the slab of a rosewood table, behind which I got, and, putting on one of George's shirts, I contrived a pair of very neat "bands" with the aid of gum and tissue-paper, and Alfred, with much decorum, pinned a master-of-art's hood of the same material to the back of my shirt. For an instant, as I surveyed myself in a long cheval glass, I could scarcely contain my gravity; but, wishing to impress my assistants with the solemnity of the occasion, I drew my face to the utmost length, and with a piece of black card, instead of a scholar's cap, I walked with downcast eyes to the reading-desk, which was most appropriately supplied by a "Davenport." I began to feel very nervous, and to shrink from the task I had undertaken, but, finding a large prayer-book open, I read a portion of the evening lessons, and closing my book, Billy gave out the Old Hundredth psalm, which was sung with great spirit by the thirteen.

I mounted a stool which I had placed behind the table. I took my text from Psalm civ., one of those for the day : "These wait all upon Thee, that Thou mayest give them their meat in due season." I at first asked, "What were 'these all ?'"—Man, the animals, the plants, the heavenly bodies,—"over which the Almighty stretched His sustaining hand, supplying the wants of the smallest as the greatest." This I illustrated briefly from my experiences as a naturalist and chemist, and concluded by pointing to the magnitude and power of the Sustainer of all these things. Then followed the collect for the day, and Emmeline played the tune of another psalm ; the service was concluded without any breach of decorum. Searle said I was born to be a bishop ; George, if he were patron, he would make me at once rector of the parish. Billy had been taking notes during my discourse, from which he wrote out a sermon, which he afterwards showed me ; it nearly represented mine. His father thought so much of it that he expanded it to about twice its length, for the benefit of his country parish.

When the season for collecting eggs was over, George was still anxious to "bleed" me ; so he ransacked his brains, brought stones, coins, and other antiquities, in the hope of extracting my coppers. I afterwards found that some of these things were stolen ; but this was not until after he

had left the place. George appeared for a time very devoted to me ; but being away from school for half a year, he got into idle habits, and was led to associate with the low and profligate of both sexes, in common with several others ; and I became more and more shy of his company.

In George's mother's garden there were several large fig trees, which we tapped in the month of July, and extracted about a gallon of sap ; this was somewhat sweet, and had a fine aromatic flavour. We drank a few teacupfuls of it, and enjoyed it amazingly. "Let us make it into fig-wine," said I. It was put into a stone jar, a few spoonfuls of yeast added, and was placed in a warm situation. It began to ferment in due course, and after the lapse of about a fortnight it had an alcoholic flavour, and in another month was pronounced drinkable. Knowing George's fondness for what was strong, I took charge of the fig-juice myself. We chose a fine clear day for bottling it, according to the invariable custom in the wine districts. To my great joy, there were five bottles and a half of liquid of a leek-green colour, and very transparent. That autumn I made about six bottles of sloe and logwood port, and a small quantity of elderberry wine. I kept all my liquors in a lock-up place, out of the reach of the servants.

George was one day invited to take tea with me.

It was over, and I opened the chiffonier to give him a glass of "fig-wine." I brought out a bottle and asked him to help himself, and, being called out of the room, I left him alone. When I came back in about ten minutes, I found four of my bottles of wine gone from the chiffonier, two of port and two of fig. What had become of them? There was George, lolling on the sofa, finishing a glass of fig-wine and smoking the stump of a cigar in a long clay pipe. I did not like to accuse him of taking them, but felt convinced he must have done so. George was very uneasy, and said he felt unwell, and wanted me to go and fetch something he had left at home. "Won't you come with me?" "No," he said; "I feel so tired." I had got about half-way to his house when I met his brother, to whom I explained my errand. "I'll bring it," said he; "never you mind." So I returned home. Just as I came in sight of the corner of our house, I saw George leaving our gate, but going off in another direction, with a large bundle in his hand. I did not like to follow him, thinking that it might lead to an unpleasant disclosure. I never cared to associate with him afterwards. This hurt his feelings, and he was resolved to be avenged on me in every possible way. He and his companions would come at night and break the palings in front of our house, jump over the boundary wall, and use bad

and insulting language to myself or others of my family.

There was a field near us of considerable extent, which was bounded by a street in course of formation. Here the boys would congregate during play-hours, and delighted in breaking the windows of a house which was for some years uninhabited. This remained for many months unnoticed; but at last the proprietor, incited by George, came and accused me of breaking all the windows, to the number of at least a dozen. This I, of course, denied; but George and Searle, another of his companions, who always echoed everything he said, thinking that now an opportunity had come for being avenged on me, declared that I did. We had now the option of going into court, or paying for the expense of new panes. This being a small sum, was paid, although grossly unjust, rather than have any more annoyance. But this was not the last exploit of this set of boys. In the neighbourhood there was a row of new villas, in front of which palings were being erected; some of these, being loose, were extracted, carried away, and sold for old metal. The profits of this amounting to several shillings, induced imitation, and more than twenty feet of the new palings were pulled up and carried away. About six boys were directly concerned in these nefarious transactions, which being brought before the notice

of the magistrates, they were fined forty shillings each, or an alternative of a fortnight's imprisonment. Two of these boys were somewhat highly connected, one being the son of a baronet, and the other the grandson of a peer. This broke up the circle of boys, who now were seldom seen together, and I was not sorry to lose sight of them.

We had now determined to leave the neighbourhood on account of my health, which was increasingly bad. I was anxious to have one more walk with Alfred, so his mother invited me to tea, after which we started. I had never been so long a walk before, for the distance could not have been much less than six miles. It was through green lanes and meadows, where I gathered plants which were quite new to me. There was the Rock-brake (*Pteris crispa*), the Common Maiden-hair (*A. vulgare*), and Roth's fern (*Lastrea multiflora*), the Black Maiden-hair (*Asplenium adiantum nigrum*), the Yellow Meadow Vetchling (*Lathyrus aphaca*), and a peculiar minute and delicate purple species, of which we could never discover the name. There was much more real satisfaction in collecting specimens and their study, than in associating with such companions as I have lately described; but I was not naturally of an unsocial turn, I loved society and sympathy when I could get it, I was not wholly indifferent to boy's games, and could outrun most of my companions, who were

older than myself, and was not behind them in skill when my interest was sufficiently excited ; but these sports appeared trivial to me when contrasted with my investigations in natural history or chemistry. No toy appeared so valuable as a retort or an egg, therefore my cricketing implements were, at a fitting opportunity, exchanged for apparatus or specimens.

From the age of eight years I showed a strong propensity for inventing stories which abounded in marvellous incidents and wild adventure, but which were rarely incompatible with truth. I had a habit of waking in the morning several hours before my period of rising ; this time I occupied in the narration of stories either to myself or others. This, if it amused me for a time, was exhausting to the mind and depressing to the spirits. My story-telling propensities being soon found out by my companions, I was much in request for a wet day or a winter evening. Several of my stories becoming popular, I was frequently urged to repeat them. Of one which formed "a stock tale" I have a vivid remembrance ; but the impromptu stories of which I was the fountain appeared inexhaustible, and seldom failed to excite interest. I could move the feelings or passions of my listeners in almost any direction, and could sport with their tears, their laughter, or their groans.

There was one little boy who was a year younger

than myself; his name was Bob; he was an independent and courageous, but intriguing, envious, and spiteful little fellow. He had won at a raffle a gun and pistols, which being beautifully made, excited the envy of all his companions. They were frequently discharged, and many birds, rats, frogs, and fish were shot. He was an inveterate story-teller, and on a winter's evening the group of listeners were divided; one half gathered round him, and the other round myself.

I will relate one of Bob's stories. "Papa," said he, "was a great artist, and when he was in America painted every bird, beast, and fish that he could get; and his paintings were so natural that the animals came from all parts to look at them. He related this one day to a Yankee, who plainly told him that he did not believe him. 'I have a picture,' said papa, 'of a female monkey, and I bet you fifty dollars that if I take it to the woods, and hang it up in a suitable place, you will soon see the wild monkeys examining it with the greatest interest.' 'Agreed,' said the Yankee. The next day they went to a distant, though open part of the forest, and papa made his black boy climb a large tree, and suspend the painting from one of the branches. About a quarter of a mile off they took up their station in a little hut within view of the painting. They waited for three hours, but although

they had good telescopes, could see nothing. At last they noticed a large monkey cross the road, and looking from the right hand to the left, perceived the picture. Papa and the Yankee now walked to within three hundred yards of the picture, and hiding themselves in a hollow tree, they, through a hole, had a good view of the forest. The old monkey was sitting down before the picture with his arms folded in the attitude of mute admiration ; at last he got up, and going behind the picture, looked with astonishment at the canvas back. He climbed the tree, and stretching down his hands, touched the picture. At this he set up a shout, and standing up on one leg, waved his hand. In about five minutes full thirty monkeys had congregated, which laughed, jeered, and made grimaces at the picture. Several got on the tree, and pulling at the suspending line, drew back in fright, and let go the line at seeing the picture ascend. The cunning monkey first named, which was an old male, and bolder than the rest, began to chatter, and stooping on the branch, untied the knots, which loosened the picture from the tree ; but he held it from falling by the cord. He and one of his companions then pulled it up, and taking hold of it, gazed at it for a moment, and then carried it carefully to the ground. It was laid flat, with the painted side uppermost, and the whole congregation

of monkeys next danced round it, and several of them, stretching themselves upon the picture, would fain have embraced it. This was enough for the Yankee, who shouted from his concealment, ‘You have won! you have won!’ At sound of which there was a general scamper among the monkeys to the trees.”

“I do not believe this at all,” said I to Bob, “the monkeys would be frightened by the smell of the paint.” “But,” said he, “papa always ground his colours with essential oil of monkey, which stands the best in that climate.” “No more, Bob,” said I, “of your crammers.”

CHAPTER IX.

The Spanish Widow.—A Relic of Pompeii.—A Civil War —The Two Pearls, an Oriental Tale, assists in the establishment of Peace.

Bob's father, who had lived most of his life in South America, had married a Spanish lady, a tall, dark, duenna-looking woman, with an awful scowl on her face. Whether being left a widow in narrow circumstances had anything to do with this scowl, it is not proper for me to say. Little Master Bob was desired by his mother to bring me in at some convenient time.

I found two ladies in black, sitting in a very dark front parlour at fancy work, both looking as gloomy as the place. Bob's mother greeted me with some cordiality, but her voice was like that of a crow afflicted with bronchitis. Aunt Christina, who rejoiced in a weasel face, possessed the most shrill soprano I ever heard ; it was sharp and biting, and, when raised, resembled a cry of agony. "Sit down my pretty boy," said she, with a blink of her little black eyes ; "tell us your name." I was pestered with questions. Bob made

a speech, in which he recounted my discoveries in chemistry, knowledge of botany, entomology, and other sciences, and concluded by saying that I was in possession of a wonderful magic powder, which, on being wet, would at once blow up. At this the Spanish lady's eyes flashed, and she said something to her sister in her own language, of which the only word I remember was *inferno*. They expressed a wish to see the magic powder, "but," continued Bob, "my young friend is also a great antiquarian; he has got portraits of his uncles, aunts, and other ancestors; and a large piece of the inner wall of Pompeii; and he has got these treasures with him." I was accordingly asked to produce my pocket museum, which was contained in a neat morocco case. It excited the wondering admiration of the two ladies in black. The history especially of my relic of Pompeii was inquired into; this I had much pleasure in giving. "I have a piece of Pompeii somewhere," said the aunt, and she went upstairs to fetch it to show it to me. After which her sister, looking at it and comparing it with mine, said, "Christina, yours is not genuine; it is so different from this young gentleman's." Christina was quite positive it was, it having been given her by Signor Barinelli of Naples. "Poor, dear Barinelli, now gone from us!" "Bad man, that Barinelli," said Bob's mother. "Indeed," rejoined her sister,

"he was the best of men." "I never could believe," said the widow, "a word he said; and as for that brick of yours, I believe he picked it up in this town, and gave it to you in ridicule of your credulity and folly in collecting and prizing rubbish." Christina flared up at this. "I know who's a liar—you, not Barinelli; wretched girl!" Then followed a volley of abuse in Spanish, in which the name of the widow's late husband and Barinelli's frequently occurred. "I shall smash that Pompeii," said the widow at last, as she snatched it from me, took the poker, and proceeded to pound it on the fire shovel. Christina rushed towards her, but being a much slighter and more feeble woman, drew back on her sister brandishing the poker over her head, her eyes glaring fiercely like a hyæna's I saw in a menagerie. Christina bethought herself of something, flew out of the room, and in a minute returned. The widow's back was towards her, and she was still pounding at the relic of Pompeii. Christina came up to me, and said in a whisper, "Just look here, I have got her favourite smelling-bottle; hand me the tongs, I'll smash that." "No, don't," said I. "Hush!" said she. The widow turned round, and in an instant perceived the truth. "Ave Maria! save my smelling-bottle out of the hands of the Philistines!" Christina flew up-stairs with the smelling-bottle, and the widow after her.

“Bob, my son,” cried she, “come and help your mother ; and you, my dear young friend, come and help Bob.” So we all four rushed up-stairs to her bedroom. Christina had the window open, where she stood for an instant poising the bottle between her finger and thumb, repeating, as she did so, the nursery enigma, “Throw a white ball up the church wall, and when it comes down it’s yellow.” When she came to the last word she threw the bottle with her utmost force against the garden wall. At this moment the widow threw herself on Christina, tearing at her hair. “My Spanish lace ! my Spanish lace !” she cried, as her lappets, torn from her head, were thrown to the other end of the room. Christina next became decidedly hysterical, and the widow also, and they at last threw themselves on the bed. “Bob,” said they, “go and get us some brandy-and-water ; we feel ill.” So Bob brought up the bottle. I wanted to go away, but Bob said, “Do stay ;” and the aunt said, “Do wait until I get fair play.” The mother then groaned and had another glass. “I hear you tell capital stories,” she said at length ; “do tell us one to calm our minds ; a good tale would be better than medicine.” “Do,” said the aunt. “Do, there’s a good fellow,” said Bob. So he forced me into the arm-chair, and I began :—

THE TWO PEARLS: AN ORIENTAL TALE.

Once upon a time a Sultan of Java, renowned for his wealth and jewels, had one, a pearl of great value, which was suspended from a chain which he wore round his neck. Anxious to get another of equal size and lustre, he made frequent application to merchants without success; they could get him a pearl more brilliant or larger, but none in which size and brilliancy were combined. As the old man advanced in years, he became more and more anxious for the fulfilment of this darling wish. He proclaimed, far and wide, that the man who should procure him a pearl of equal size and lustre should have the hand of his only daughter, the most beautiful girl in the island, and a portion of ten lacs of rupees. This offer gradually became known, through the commerce of Java, in all the East. Merchants went out of their way to visit the dominions of the sultan, to exhibit to him pearls of the highest quality. The sultan had many interviews with them, but was always disappointed. At last, in despair of ever finding the object of his search, he refused to see any more merchants; secluded himself in his palace, and resigned himself to gloomy thoughts.

About ten years before the time of which we were speaking, the sultan had a physician, who was

as much renowned for his wisdom in the affairs of life as for his skill in the practice of his art, who, making himself necessary to the prince, was his most valued councillor.

The favourite wife of the sultan being suddenly seized with a violent pain and swelling in her neck, the physician was sent for, who at once declared her disease to be carbuncle. The sultan had several interviews with him. "Any remedy I may apply," said the physician, "is of very doubtful efficacy. At present her case is hopeless. To do nothing is certain death,—to do something may cure, but may kill. The only remedy," continued he, "in which I have any confidence is a deadly poison; shall I try it or not? Will you take the responsibility?" The sultan sighed, was cast down by grief, and for some minutes could not speak. "Do what you think best," said he at last, laying his hand on the physician's shoulder. "In any case I shall be satisfied."

The physician administered the medicine; but the sultana died. The grief of the sultan being excessive, he sought for consolation in the society of her brothers, one of whom, a physician, accused his court brother of conspiracy to the sultan and deliberate murder. "For," said he, "jealous of the influence of your wife, he wished to get rid of her in order that his daughter, whom you have lately added to your harem, might reign in her place."

The fury of the sultan at this announcement knew no bounds; he flew on his turban and robes, and rent them in pieces, and swore, on the Koran, to put the offending physician and his whole family to death. Secret information of this vow was brought that very night to the condemned man. His wife and family besought him to flee while there was yet time. "No," said he, "I have served the sultan all my life, and I will not run away from his service in prospect of death." He took leave of his wife, commended his children to Allah, and concluded, "I have not much fear of death myself; if the sultan does take my life, you will, I know, avenge my death, but in the way that I would have done if I had lived, and my dearest friend had been slain."

The physician entered his palanquin, had himself conveyed to the palace, and threw himself at the sultan's feet. He was much moved, but reproached the physician with his treachery. In vain the latter recounted his former services, and the improbability of the story; but the two brothers of the sultana demanded his death with so much vehemence, that the sultan consented. The old councillor and physician was carried from the royal presence and beheaded. Misfortune followed on the family; the physician's daughter sickened in the harem, and was soon a corpse; and his two sons, who occupied conspicuous

positions at court, were privately poisoned. The widow's only hope was now in her youngest son, a youth of fifteen, who was steady and thoughtful beyond his years. "Flee from this island," said his mother; "take this purse of gold—trade, and prosper; and, when wealth crowns your industry, send for your old mother."

Abdallah listened to his mother's words, and with tears bade her adieu. He sailed for India, and for five years worked as an assistant to a merchant at Goa. He entered privately into transactions on his own account, and, at the end of that time, opened an independent business as dealer in jewels and other precious commodities. He sent many messages to his old mother, and, after the lapse of another five years, he found himself the wealthiest merchant of the place. He wrote a letter to his mother, in which he recounted all her kindness to him, and said he was now in a position to keep her like a princess. He charged his trusty traveller, Mahomet, with this letter, and, if possible, to persuade his mother to accompany him back to Goa; but the old lady would not be persuaded. "You must come and fetch me yourself," said she.

The news of the sultan's pearl was brought back by the trusty Mahomet, who was one of those merchants who had had an interview with his highness on the subject. He gave a most careful description

of the sultan's pearl. "I have just bought one as fine," said Abdallah. "It is finer," said Mahomet, as he handled it. "You should at once set off for Java, show yourself to the sultan, present the pearl, and claim the princess."

Abdallah and Mahomet arrived at the court, which was some days' journey from the coast. Mahomet at first demanded an interview with the grand vizier. "I am the merchant," said he, "who presented some pearls to the sultan the year before, but I had then none which he was pleased to accept. I am now the bearer of a message from my master, the prince of merchants; who, hearing of the sultan's munificence and refined taste, has come from the ends of the earth to present him with a pearl worthy of his acceptance." The grand vizier laid this message before the sultan. The old man gave but a doubtful response. He had been so often disappointed that he did not feel inclined to grant a stranger an interview. "But," said he to the vizier, "send for the merchant, and, if you are satisfied that the pearl is at all equal to mine, I will grant him an interview to compare it."

The news of the arrival of a princely merchant, with a magnificent pearl, had by this time reached the harem, and the ears of the young sultana. Burning with anxiety to know her fate, and the sort of man she might possibly have for a

husband, she attired herself in the costume of a youth of rank, and, mounting a horse, she secretly left the palace, and repaired to the residence of the merchant. He affected almost the style of a prince, and made great difficulties about granting audiences. She at last, by liberal bribery, was admitted ; and asked, as an immense favour, to be permitted to examine the jewel. "What have you to do with it, my pretty boy ?" said Abdallah. "I am very fond of jewels," said he, "and want very much to purchase one. I have heard that yours is one of the finest in the East ; and should like to purchase it if the sultan does not. I am anxious to match this ear-drop," and at this she opened a small casket, and displayed a pearl of rare magnificence. Abdallah at once produced his, and a cry of pleasure and astonishment escaped the young lady. It was somewhat larger, and had a finer lustre than the one she had brought. "I have something to say to you, which I cannot utter except in an inner chamber," said she. Mahomet and her attendant were at the other end of the room. Abdallah, at this, led her into his closet, and shut the door. "What is it, young man, that you would say to me?" "Pardon my disguise ; I am the sultan's daughter, and this is his jewel. I heard my father would not grant you an interview, so I, fearing that you might be disappointed, came to give you the

opportunity of comparing the jewels." Abdallah pressed the hand of the young princess. " You are," said he, " to be mine." The princess trembled, and said, in a timid voice, " I must away back, for my father knows not that I am gone, and will miss the jewel, which I snatched from his couch as he slumbered." The lovely girl departed, leaving Abdallah in a state of great excitement. The grand vizier soon after called, saw the pearl, and, pronouncing it magnificent, expressed his belief that it would fully satisfy the sultan.

The next morning the sultan and his court assembled at an early hour, and the merchant, accompanied by Mahomet and six attendants, richly attired, were introduced. " I hear," said the sultan, addressing Abdallah, " that you are the possessor of a pearl equal to mine in size and beauty." " I have a magnificent pearl which I should like to compare with that of your highness," replied Abdallah, bowing profoundly. On this, Mahomet handed him a golden casket, which he opened in presence of the whole court. He handed the jewel to the sultan, whose eyes sparkled as he beheld it. " It is undoubtedly finer than mine; and you shall have the reward, as well as the market value of the pearl." The sultan lifted his jewel from the case, and, taking that of the merchant, he held them both up before the entranced gaze of the

court. "Bring hither my daughter," said he to his black chamberlain. She came trembling, as she was unveiled. "There," said he, "is one half the reward, the other half shall be given on the day of your marriage." The old man at this gazed very



The Two Pearls.

earnestly at the face of the merchant; his voice faltered, and he said, "You remind me most strongly of a friend of early days—my playmate, and, in manhood, my friend, councillor, and physician, now unfortunately dead; I fear," said the sultan, slowly, "the victim of a foul conspiracy."

At this a cloud gathered on the face of the grand vizier. "What was his name?" asked Abdallah. "El Allah!" exclaimed the sultan. "That was my father!" and Abdallah threw himself at the sultan's feet. The sultan, overcome by emotion, fell on his neck. "My dear youth," said he, "you have lost your father, find one in me." At this moment an aged woman, who had been standing near the steps of the throne, approached the sultan. The guards beckoned her back. She prostrated herself before the prince, "I am the widow of El Allah, your devoted servant and friend, and the mother of Abdallah. My husband charged me to avenge his death on you, but in a manner that would be pleasing to his gentle spirit. My son, my hope, my greatest treasure, now gives you the object of your desire; pray accept this, a widow's revenge, as an act such as El Allah would have done. Now you have two pearls—your daughter and my son; my son is the most precious. But carry me out,—I cannot longer stand the prosperity which I see now dawning on my race." And the old woman fell down in a fit.

"Is that all?" exclaimed Miss Christina, when I had finished; a similar exclamation escaped the widow, "We must not harbour evil to one another," exclaimed she, getting up; "forgive me, Christina,

but I served you out," she said; and they burst into a laugh, and kissed one another. I left, and I never saw them again; but I got many messages from them, through Bob, to come to tea and tell them another story.

CHAPTER X.

An afflicted Curate.—Poor Little Tommy.—“I never found the Devil there.”—A Witch.—Gimlet, the Carpenter; his Lady Admirers, and Life amongst Pirates.

SOON after this we let our house and removed into lodgings. My various collections and utensils were now put into very small compass, and I had less opportunity of pursuing my investigations, but my health was so wretched that even my mental activity was checked. In the street in which we had taken up our quarters were a great number of families; and among them that of a clergyman, who, with his wife and two sisters and little boy, occupied a small house at a nominal rent. Tommy was a particularly frank and affable little fellow, about two years younger than myself, and was very communicative. He told me his father was the curate of a parish in the south of Devon, and that he had only £130 a year, on which to keep himself, his wife and child, and his wife's two sisters. They kept no servant, and waited on themselves. He appeared usually cheerful, and was always loquacious; and, although

dressed in little better than sackcloth, had an air of gentility about him. They were at that time much depressed, for a dreadful St. Vitus's dance had for the last six months unfitted the curate for duty, and he had come to the town with the view of obtaining medical treatment. Mesmerism was at that time much in vogue for nervous affections, and the reverend gentleman went every day to be "stroked." The principal operator was a Miss Green, a lame and sinister-looking, but tall woman.

She came very often to the house to tea, and gained immense influence over the invalid clergyman, and, through him, ruled the whole house. Nothing was too good for her. His gold watch and chain were given to her; a silver inkstand, a present from his parishioners, was re-engraved and presented as a small token of regard. "Dear Miss Green," "dear Miss Green," resounded through the house whenever she arrived. He would lie down on the sofa with his head on her lap, as he was put into the Mesmeric state. "Mamma does not like all this," said little Tommy to me; "she hates Miss Green, and so do my aunts, but it's the only thing that does papa any good." Just then the clergyman passed, with Miss Green leaning on his arm. "So there you are, Tommy," said he, and passed on. Miss Green grinned most unpleasantly on us, and I thought I never saw a more disagreeable-looking woman.

Miss Green's duties at the Mesmeric Institution occupied her the greater part of the day, but she boarded in a family outside the premises. These became acquainted with the curate's wife, and, influenced by her, gave Miss Green notice to leave.

Miss Green came in high dudgeon to the curate's house, stated the atrocious manner in which she considered she was treated, and proposed to come as a boarder to them. The thought of this delighted the clergyman. "To have you with us, what a treat! What a privilege! But you will never be able to put up with our accommodation. You know we are obliged to wait on ourselves." "But," added Miss Green, "I can pay you £50 a-year, which will board me and keep a servant." This was thought an excellent idea by the two sisters, on whom the burden of household management mainly fell, but was violently objected to by the wife. At this juncture Miss Green spoke: "I consider that you are most cruel in opposing a project which affords a means for the relief of your sisters from the crushing fatigue and exertion of washing and housekeeping. You ought to be ashamed of yourself." The wife from that moment became very meek, and Miss Green arrived the day after.

Tommy was an inveterate gossip, and used to be running in several times a day with the news of what Miss Green, his mother, or his father, said or

did. "I have a little room," he said, "entirely to myself at the top of the house, and there I go and sit most of the day." "What do you do there?" said I. "I indulge in melancholy thoughts. Near papa's curacy, in the south of Devon, there is a dark cave where I used to go and sit. There was nothing in it but old bones and bats. The country people were afraid to go there; they said the devil was there; but I never found the devil there, although I looked for him with a lantern."

One day Tommy came to me crying bitterly. "Mamma says she will drown herself if papa does not leave off kissing Miss Green." I saw nothing of Tommy for two or three days. At last he came in, looking most miserable. "Papa," said he, "has run off with Miss Green; has taken nearly all mamma's clothes, plate, jewels, and watch, my christening cup, and the silver watch my godfather gave me!" The establishment was broken up, and some years after I heard that his reverence and Miss Green were in Mormon territory. Tommy was such a nice little boy, that I was very sorry for him.

The landlady of the house in which we lodged was a very good-natured and kind, but thriftless, untidy, and otherwise singular woman. She had been the heiress of a small farm, which had been dissipated by the mismanagement of her first hus-

band. She had the liberal ideas of a person in comfortable circumstances, with very narrow means. She enjoyed the reputation of being a sort of witch, and numbers of persons of the lower orders used to come to consult her about future events, and unexplained facts. These persons made her presents of fowls, turkeys, or fruit; so that she, with little money, had often the luxuries of the season. But she was very silent with persons in general about her occult powers. They were suspected by few, and we lived in her house a good many months before we discovered them. I once went into her sitting-room, when, to my surprise, I found her in a very peculiar position. She was kneeling on a three-legged stool, with a manuscript book before her, and a number of strange-looking implements, scraps of parchment, and pieces of wood cut in various devices, scrawled and painted over with writings in various colours. She was muttering a most singular prayer. She was so absorbed in her thoughts that she did not notice my entrance, and I, not wishing to disturb her, drew back. Just then the servant, Pamela, came up to me, and I said, "What in the world is she doing?" "Ruling somebody's planet, to be sure." Then followed an explanation, on the part of Pamela, of her various dealings with the supernatural world. On talking to the landlady herself, she frankly confessed her

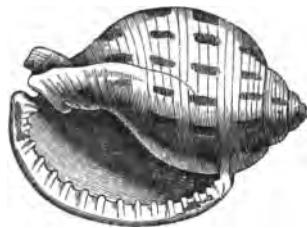
practices, but desired me to say nothing about it as long as I remained in her house.

She had several children; and among them the youngest, Daniel, was described by her as a very



Purpura patula (Africa).

fine fellow. Seeing me a collector of shells and other specimens, she wrote more than once to her son to procure all he could; and as he was the



Cassis canaliculata (Africa).

principal carpenter on board a large man-of-war employed in cruising on the coast of Africa and India, he had, as I then thought, rare opportunities for collecting. At last she received a note that his

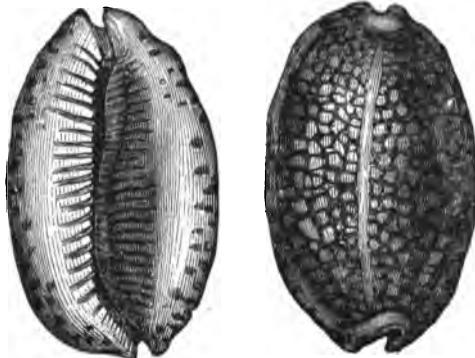
ship was in Plymouth Sound, and that she might hourly expect her son.

"Jack's return from Canton" was not more earnestly expected by his nephews and nieces than



Conus geographus (Africa).

the arrival of Daniel Gimlet. The next morning Mrs. Gimlet told me, with tears of joy, that her son had arrived late last night, and that he was now



Cyprea hystria (Africa).

unpacking his curiosities. I rushed down-stairs, and observed with delight the quantities of shells, corals, carvings in wood and ivory, a live parrot, a chame-

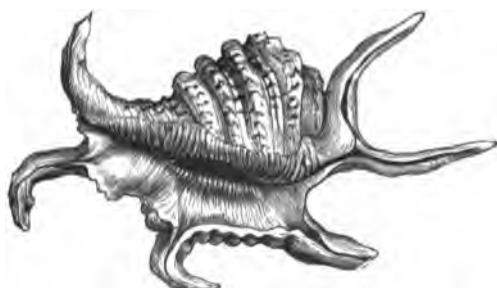
leon, and a tortoise. But the most valuable thing he had brought was a bladder full of the bags of the musk-deer—the stench of which, when opened, made me deadly sick, stagger, and bleed at the nose, and I did not feel my head clear for some days after. Daniel was not aware of the full value of his musk, and rather foolishly parted with it for about five pounds, when it was worth at least thirty pounds.

Daniel's things, except the musk, were immediately carried up to the drawing-room, and there spread on two long tables. Daniel had a handsome face, fine black beard, and manly figure; and, as he strutted up and down the street, with his hands in his pockets, attracted the admiration of the single women.

A lady and her daughter, a Mrs. and Miss Waters, lodged in the same house. They were thin, scraggy people, with semi-transparent hands and sepulchral voices, and noses and chins sharp as needles, and their style of dress was some years behind the progress of the age. All these little defects might have been condoned had they been more amiable; but for meanness, petty insolence, affected generosity, and mock-modesty, I never saw their equals. In passing their room-door, I heard Miss Waters say: “Mrs. Gimlet, I want to speak to you;—who is that handsome gentleman that I see in naval uniform, walking up and down?” Mrs. Gimlet came to the



1.



2.



3.



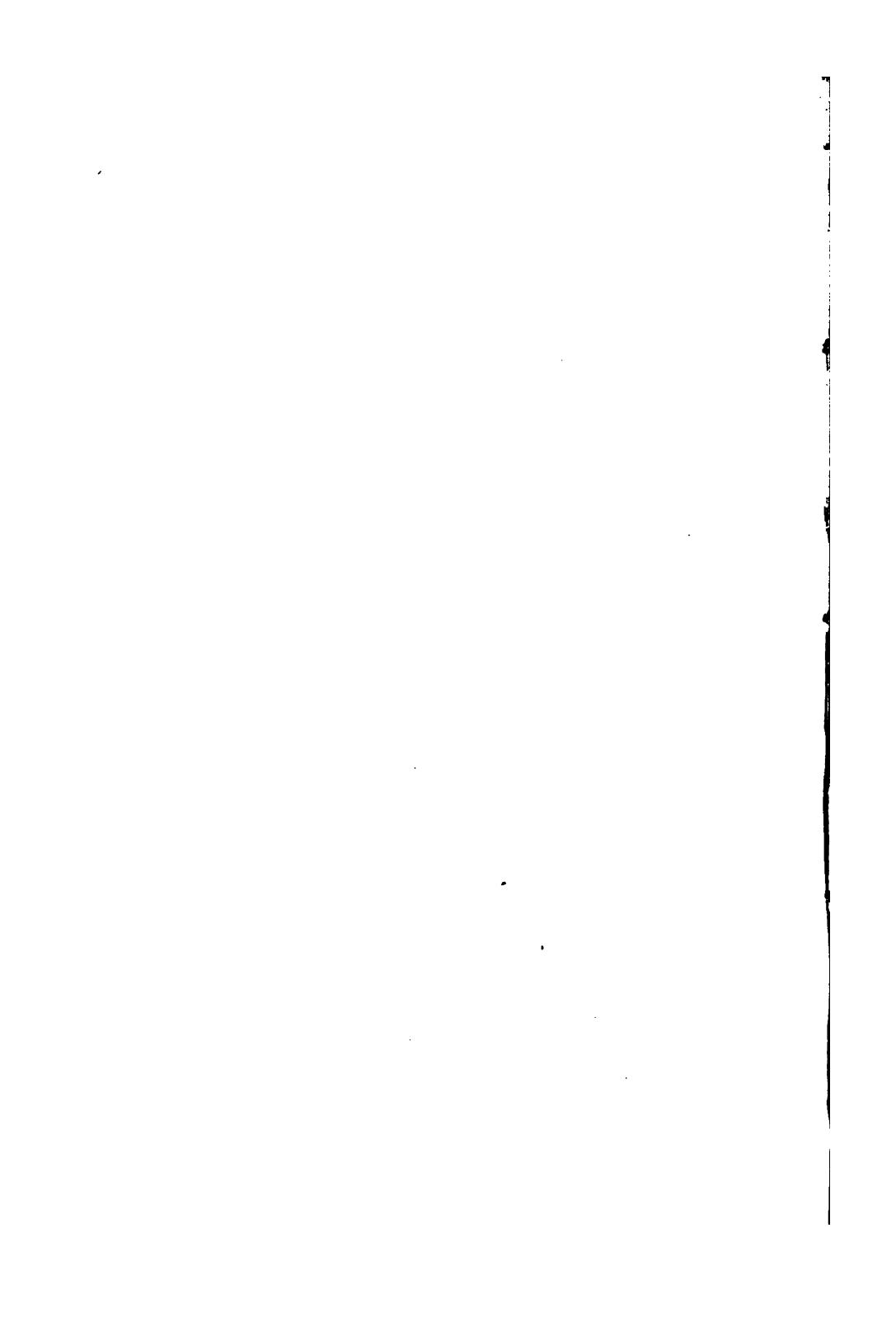
4.

SHELLS FROM AFRICA.

1.—*Nautilus pompilius.*

2.—*Pteroceras churagra.*

3, 4.—*Patella longicostata.*



window. "My dear Daniel, to be sure." "Oh, is that Captain Gimlet, your son?" "My son is not captain, but carpenter," said Mrs. Gimlet, in a humble tone. And they forthwith began to question her about her son—his age, his prospects, and his voyages. The questions from the young lady were so numerous, that Mrs. Gimlet said, "Oh, I am sure Daniel would like to talk to you himself; he could tell you about these foreign parts much better than I can." "Tell him, as soon as he is disengaged, that we shall be glad to see him." But I did not hear all this on the stairs, for Mrs. Gimlet came down and related a part of it to us.

Daniel was not long in responding to the invitation. The young lady warmly extended her hand, and said, "Welcome to England, Captain Gimlet." He was invited to take wine, and was offered a seat in their pew in the Unitarian chapel. As I passed the door to go to bed, I heard the sharp voice of Miss Waters exclaim, "Good-bye, dear Captain Gimlet."

Daniel had been for some years engaged to the respectable lady's maid and housekeeper of an elderly single lady; but Daniel was so much occupied with the ladies in the house that, although he did not live above half a mile from her, yet it was a week before he went to see her. She was about seven years older than himself—a neat, prim, very

proper, but rather uninteresting-looking person—considered by her mistress a perfect treasure for her knowledge of housekeeping and honesty. She was very frugal, having saved up, during the twenty years she had been in service, about two hundred pounds, with which she intended to open a lodging-house on her marriage with Daniel. Hearing that Daniel had arrived, and thinking that he must be ill that he had not paid his respects to her, she made him some calves'-foot jelly, and, putting on her coal-scuttle bonnet, she hied to his mother's house. She opened the door and walked in, as was her custom; and, going down to the kitchen, she found Daniel in the midst of a flirtation with Pamela the servant, who was his cousin. Daniel, of course, rose and embraced his dear Mary Daw. “Fearing you were not well, I have brought you some jelly,” said she, in her kindest voice; “and missis has allowed me to invite you to tea to-night; but you mustn’t smoke your pipe.” “Humph!” said Daniel.

He divided his Sunday into three equal parts. He went with the Waters to the Unitarian chapel in the morning, with Mary to the Independent chapel in the afternoon, and with Pamela to the parish church in the evening; after which they had a nice long walk. And Pamela might well be thus favoured, for she was at least fifteen years younger than the

others, had a very pretty fresh complexion, and a lively manner, while the others, Daniel confessed, were "foggy." Daniel, however, saw the necessity of doing, to some extent, his duty to Mary, and did not positively neglect her. Of this Miss Waters was very jealous. Mrs. Gimlet would come and tell us all this, asking our advice whether her son should propose to Miss Waters or not. "He feels sure," said she, "of her regard; for she had put her arm round his neck, and called him darling, several times yesterday; but he thinks she is nearly twenty years older than himself and that the money is all annuity." So Miss Waters lost Daniel.

I got much information on natural history from him. He had visited the Antarctic regions, the home of the albatross in the Southern Ocean, had eaten its gigantic eggs, made tobacco-pipes of its bones, killed the sea-lion, the sea-leopard, and the sea-bear. Had landed on the island of Juan Fernandez, where Selkirk passed so much of his life; visited the Cape, Sierra Leone, and Calcutta. He was full of anecdotes of wild adventures and hair-breadth escapes and cut-throat experiences; for, landing on an island of the Greek archipelago, he was captured and detained a prisoner for some months in the hands of pirates, who found his skill as a carpenter of great value. He at length escaped from them by hiding himself amongst the rocks of

an island where they had landed, until they, wearied with searching for him, embarked. He made his way, eventually, in a small craft to Corfu, where, singularly enough, he found his own ship at anchor.

I did something at mechanics during my stay here; but, it being winter, I had little opportunity for collecting plants or insects.

CHAPTER XI.

Botanizing at Budleigh Salterton.—Collecting Marsh Gas.—Bog-cotton and Gun-cotton.—Infernal Blow-ups.

As the spring advanced, my delicate health still continued, and my mother determining to try the effect of change of air, we removed to Budleigh Salterton, a pretty village on the coast. I saw much there to interest me. The beach was pebbly, and afforded few shells, but many fine seaweeds, jaspers, agates, and curiously marked sandstones. Some of the latter, worn smooth by the action of the waves, we varnished, when they presented the appearance of landscapes, but we never found anything of much value on that beach.

The footpath between Budleigh Salterton and Exmouth led us to a delightful walk along the top of some high cliffs facing the sea, about which a number of jackdaws and choughs flew; the latter we recognised by their red legs and bills. We were told they bred there earlier in the season, but I now think this is improbable. As we walked on past these cliffs, we entered some corn-fields, which

afforded a great variety of beautiful flowers, many of which I found for the first time. There was the Corn-cockle (*Agrostemma githago*) ; there was the Yellow Cow-wheat (*Melampyrum pratense*) ; and a very uncommon species of madder, which I never found before or since. Still farther on, we came upon a moor, which afforded, besides three species of heath (*Erica cinerea*, *E. tetralix*, and *Calluna vulgaris*), two orchids—the Green-winged Meadow Orchis (*O. morio*), and the Man Orchis (*Aceras anthropophora*).

On this moor I was delighted to find a most interesting bog, where the Bog Pimpernel (*Anagallis tenella*), the Round-leaved Sundew (*Drosera rotundifolia*), and the Marsh Orchis (*Orchis latifolia*), grew in wild profusion. Some parts of this bog were deep and dangerous, and considerable care was needed to avoid going over the shoes. This, however, I often did, and more than once came home up to the knees in black mud. On poking a stick into the water, and stirring the mud, I observed bubbles escape, which I at first thought were air ; but noticing what rose to the surface had a very gassy smell, I next day took a box of matches with me, and lighting one, held it over the bubbles as they rose to the surface of the water ; one or two of them exploded as they came in contact with the lighted match. This was the “marsh,” or light carburetted

hydrogen gas. I wanted to collect a bottle of this gas, so I brought a clear wine-bottle with a sound, well-greased cork, and a tin funnel. I filled the bottle with water, and, inverting it, placed the funnel in the neck. This I placed in one of the clearer parts of the bog, and holding it with one hand, with the other stirred the mud with the stick, and endeavoured to catch the bubbles in the funnel. They displaced the water, and after about a quarter of an hour's puddling I succeeded in filling my bottle. I corked it carefully under the water, and taking it home, I proceeded to perform a few experiments. I took a small piece of glass tube, which I held horizontally for some time over the flame of a spirit-lamp; I continued to turn it, that the heat might be generally diffused. The glass became soft like wax, and I drew it out to the form of a fine-pointed pencil. I had then two pieces of the same size and shape, each with a little bore at the small end, and as fine as thread. I laid aside one piece, and putting the other into the flame of my lamp, I sealed it hermetically; then, with a blow-pipe of my own making, I spread the flame on to the entire surface of the end of my glass tube, until it became of a uniform orange-red colour. I next placed the other end of the tube in my mouth, and blowing slowly and steadily, I expanded the softened tube into the form of a bulb. I then placed one side of this bulb

in the hottest part of the flame, and blew out a hole in it, which I, with the aid of a wire, carefully enlarged, keeping it all the time in the flame. Taking a thistle-head as my model, after some trouble I formed the glass bulb into the mouth of a funnel of this shape. Taking it and the small drawn-out tube before mentioned, I drilled two holes in a cork for their reception, which I luted with beeswax. I next inverted my bottle of gas, and when it was in this state placed in its neck the cork with the two tubes. I covered the mouth of the thistle-headed funnel with one hand, while mamma applied a lighted match to the small tube, which being lighted, the escaping gas burnt with a clear flame. Knowing that my gas would escape with great rapidity through the funnel, I was careful to pour a little water through it, just sufficient to cover the end. My gas burned on for about one minute with brilliancy, when I, perceiving it flicker, poured some more water into the funnel, and as long as I kept pouring, the gas continued to burn with great force. This was of course owing to the pressure of the water, which caused it to escape with increased velocity.

In the same bog that I have just described, I observed the Narrow-leaved Cotton-grass (*Eriophorum angustifolium*) growing in great abundance. Struck by the beauty of the plant, I gathered a

large bunch of it : it reminded me of some pods of cotton which had been sent from the West Indies, but had the lustre of thistle-down or floss-silk. I visited the bog several times, and gathered enough of the heads to fill a small bag, which, when cleaned of everything but the down, were converted into a pin-cushion. The landlady of the house, observing my labours, remarked with a sneer that they reminded her of those of an old gentleman who had lived near her in the north of Devon. He had been at some pains to plough some acres of boggy land, which was sown with the seeds of this cotton-grass, and in due time produced an abundant crop. The old gentleman in great glee forthwith published a pamphlet, in which he proposed that England should thus grow her own cotton. He sent samples to spinners for trial, but they declared that the fibre was too short for their machinery, and so the produce of the cultivated bog was formed into pillows and mattresses ; but the old gentleman soon died in debt. I was somewhat disgusted with the woman's contemptuous manner towards this inventor, and pioneer in bog culture, and bethought me of the too common fate of those who are in advance of their age.

Gun-cotton was now much talked about for its explosive character and peculiar properties. I in vain tried to purchase it, for no one kept it, and was indeed overjoyed when I accidentally obtained a few

pages of a miscellaneous magazine containing the interesting paragraph, "How to make gun-cotton." As advised in my recipe, I purchased a quantity of saltpetre, which I thoroughly dried, and added a proper proportion of strong sulphuric acid. These I kneaded with a small quantity of cotton-wool, an old stocking, and a pocket handkerchief; but they did not nearly absorb my acid. I bethought me of the bog-cotton; so ripping open my pincushion, I placed a handful in the acid, and after leaving the whole the required number of minutes in contact with the acid, I thoroughly washed it in the pump trough, and placed it in the sun to dry. I had now nearly a quarter of a pound of "gun-cotton," with which I proceeded to make some experiments. I borrowed an inch auger, and drilled a hole a yard deep in a sandbank some distance from the house. I made a rocket-case, in which I placed about an ounce of the gun-cotton; this I rammed hard, and affixed to it a piece of quick match four feet long, and placing the whole in the bore I had drilled, I stuffed it up tightly with clay and ignited the match. I removed to the distance of two or three hundred yards, and waited for ten minutes in a state of nervous anxiety. At last I observed a puff of smoke, then a grumbling sound, and lastly a loud explosion. I went to the spot, and found that I had demolished about six feet of the bank, which lay in

confused fragments on the ground. The strata were sandstone, full of fossils, and many lay within my reach. There lay, also, the nests of several wasps, a toad stunned, and many beetles were running in circles, appearing not to know what to make of the explosion. I sat down and began to examine the fragments of stone, and was doing so with great earnestness, when I suddenly felt a hand on my shoulder. I started, turned round, and found myself in the clutches of a very savage-looking farmer, who began to abuse me; but I was some seconds before I knew what it was all about. At last the words "your infernal blow-ups" riveted my attention. "My team," said he, "ran away on hearing that noise, and I have only just been able to stop them! besides, you are blowing the hedges to pieces, you——." I took all this very coolly, and continued to sit down. "What was it?" continued the man. "Only," said I, "a cotton stocking." "Full of powder?" said he. I protested I had no powder, and offered to show him. He gave a sort of growl, and assented. I ignited a small portion of the cotton, which exploded with such extreme rapidity that the man was astonished. Whether he would have been angry or pleased I do not know, but a little boy came running up to tell the farmer that his team had started again of their own accord, and were almost out of sight. On hear-

ing this he went off, and I hurried home by another way. I found that gun-cotton, even if ignited on the top of gunpowder, did not explode it. This is to be attributed to the rapidity with which it fires.

During all my stay at Budleigh Salterton, I had no young companions, but found society in the vast variety of new and curious objects the place afforded. A large portion of the low lands beyond the village being embanked, were drained by ditches, which afforded a great variety of interesting plants. There was the Sea Purslain (*Atriplex portulacoides*), the Marsh Orchis (*O. latifolia*), the Wild Celery (*Apium graveolens*), the Bulrush (*Typha latifolia*), and some others. The sand cliff which I blasted afforded abundance of the Sea Spleenwort (*Asplenium marinum*). I gathered a good supply of the celery and the bulrush. The first had a very acrid taste, and retained its smell when dried for at least seven years. Of the fresh herb I made a tincture, with which I tried several experiments on cats and toads. Given in a strong dose to the former, it had rather a diuretic effect; but the latter bore it with equanimity, and at last vomited it. The heads of the bulrush, dipped in salad oil, served to light our walk one night through a very dark lane.

CHAPTER XII.

A Natural Marine Garden.—Good and Bad Collectors.—The Idiot Twins.—A Wild Spot and a Wild Story.—The Shipwreck and a Disappointed Bride.—Wedding Garments dyed for a Widow.

A FEW miles from the village, by a somewhat circuitous route, is a romantic hamlet, consisting of about half a dozen houses, situated on the edge of a cove, the banks round which are very steep, and are clothed with vegetation—brambles, bushes, and tall vetches. Among the plants we saw a dusky-looking animal moving about, which I at first thought was a dog, but on throwing a stone at it, it came somewhat nearer, and I saw it was a badger. This is rather a famous locality for badgers, for a good many years after I remember reading in a newspaper an account of a conflict between a man and four of these animals at this very spot. We scrambled down the steep bank, and searched in the gravelly beach for shells. I noticed several minute forms among the sand, doubtless the shells of Foraminifera; but my specimens were lost on the way home. There were a great number of beautiful

seaweeds (*Fuci*) and sea-anemonies (*Actiniae*) in the rocky pools. I noticed a great variety of species there, which appeared to perfection as they expanded their tentacles, in their homes among a forest of weed of varied colouring. They reminded me of chrysanthemums, wreathed with clematis and the Virginian creeper, enriched with the crimson glories of autumn. My trousers were soon tucked up, and, wading into the pool, I chased before me shoals of rocklings, and several fifteen-spined sticklebacks (*Gasterosteus spinachia*), but I did not then succeed in capturing them, and was soon called out of the water, as the chaise was waiting to convey us home. I considered that a very unprofitable day, for I obtained no specimens worth speaking of, although I expected much from going so far. In after-life I have often had similar experiences ; and have noticed that success was more dependent on diligence in the collector than upon nature's spontaneous productions. A party of friends once started on a collecting expedition, great things were promised, for the localities visited were known to be rich, and some of the collectors were experienced ; but the party returned, bringing home nothing of value. I was to have gone, but at the last moment was not allowed, as it was feared I should be over-fatigued. Out of spirits, I at first thought that nothing could be done, for all my old localities had been already

exhausted. I determined to try once more a field in which I had played a hundred times. I searched the crevices of the bark of an old elm tree, where I found a *Clausilia nigricans* and a *Pupa musicorum*, shells of which I had previously not the least conception.

In a ditch I found a number of curious animals and plants; two species of duck-weed, with their seed vessels, which I had hitherto confounded; two minute aquatic molluscs—a *Planorbis* and a *Neritina*; a curious red leech; and a *Hydra*. I had here more abundant material for study than my companions, and had less reason than they had to be discontented.

"Think not the honey with those objects grew,
'Twere not in them, but in that power
To double even the sweetness of a flower."

Don Juan.

As we drove home from "the cove," one of the company began recounting her morning experiences. While we were looking for plants, shells, and pebbles, she was walking round the cottages, chatting to the children, and entering into conversation with the patriarchs of the place, who, enticed by the balmy air, were sunning themselves on a stump before a rustic gate. On admiring the flowers which grew luxuriantly in the well-tilled garden, she was invited to enter by a middle-aged matron, whose garrulous tongue poured forth the heads of

her family history within the next ten minutes. Her husband, a retired coast-guardsman, was one of those who sat on the stump, and as she expressed it, was "as loose in his head as he was in his feet." Her only living child, a daughter, about seven years since was to have been married to a fine young sailor in command of a smack which traded between London and the Devonshire ports. The wedding was to have taken place in a few days, and every preparation was made for it. Matilda left her place, and bought a muslin gown. It was February, and the weather was stormy, but the coast-guardsman was at his post. The smack was due at Sidmouth, but the wind had blown her farther to the south; she beat back against the wind, and endeavoured to reach her port, but was blown towards the rocky Sidmouth coast. The old coast-guardsman from his station perceived a smack labouring in the waves, and with his telescope made it out to be "The George," commanded by his expected son-in-law. It was a dark night, but the smack carried a light at her mast-head. The coast-guardsman went towards the cottage, and informed his wife and daughter of the position of the smack. The whole village population, to the number of a dozen, rushed to the cliffs, and watched the smack strike, and heard the cries of distress of her crew, who were washed one by one from her deck. It was difficult at all

times to launch a boat in the cove, but now that the sea was high it was deemed impossible, for the waves were running races for the privilege of dashing boats to pieces. Poor Edward—the last of the crew and their captain—lashed himself to the mast, and



Shipwreck on the Devonshire Coast.

determined to perish with his ship. He shrieked with agony, called on Matilda and his friends by name—for the smack was labouring on a rock not a hundred yards from the cottage, and on this rock I had stood. The waves at length carried away the mast, and Edward, still clinging to it, was washed

close to the cliff, over which hung Matilda and her father and mother. "Throw me a rope!" shrieked he. They had none; and in the wildest distress rushed to their cottages. Matilda alone stood on the cliff, and she leant over, supporting herself only by the overhanging bushes. An enormous wave bore him nearer to her, and blinded her by its spray; it receded, and she saw him no more; but a shrill cry resounded for a few moments through the rush of waters and the lash of foam.

Years after, on stormy nights the old mother would leave her snug fireside, and walking to the edge of the cliffs, fancy she heard Matilda's name echo through the walls of the narrow cove.

Poor girl, her father had great difficulty in restraining her from throwing herself into the surging waters, to share her darling's grave. The morning saw the whole population on the beach; for the tide had now receded, and fragments of wood from the smack were being constantly washed ashore. A strong sea-chest left on the rocks was secured by the old man; it was Edward's, and contained the presents for his dear girl: the light silk intended for a bride was dyed as mourning for a widow. A week after the wreck Matilda saw a corpse floating on the water. The sea was calm, and she with a telescope made out the face of her beloved. His body was brought ashore, and was reverently buried

in sight of the cove ; but Matilda was now resigned to melancholy, for she had been frail. She gave birth to twins—who, affected doubtless by her gloomy frame of mind, were idiotic, and she was never afterwards rational,—but with her children was a burden on her parents. This story would have formed the foundation of a poem had it been told in the hearing of George Crabbe ; and it left a gloomy impression on our minds for some days. The idiot twins were about seven years old when we saw them.

The old man showed us a bit of crystal, of a greenish-yellow hue and two inches long, which he had picked up on the beach ; this was hard and clear. It might have been fluor-spar or aquamarine ; it was shaped like an octagon ruler. I could have purchased it for five shillings, but this was too large a sum for me to give for a single specimen.

The seines used for fishing off the beach at Budleigh Salterton were of large size, and it was an exciting thing to watch their being hauled in during the mackerel season ; I was present when 5,000 were taken at a single haul. Accompanying the mackerel were large numbers of the spotted Dog-fish (*Scyllium canicula*), the Cuttle-fish (*Sepia officinalis*), a species of *Loligo*, small species of gurnard, and in one instance a sun-fish, which I hoped to secure for my museum ; but there were other competitors in the field, and I lost it. There were frequent quarrels amongst the

fishermen for priority in the pursuit of the mackerel, and they accused one another with harsh prefixes of frightening away the fish; but the porpoises were the most formidable enemies they acknowledged in this respect, being exceedingly numerous that season along the Devonshire coast. The men appeared never to attempt catching the porpoises, at which I was rather surprised. One of the more intelligent of them told an anecdote of a private gentleman who caught some sixty of these animals off the coast of South Devon: using a harpoon, shot from a cannon, he could strike them at fifty yards' distance. He got many hogsheads of oil—worth £500; besides their flesh, which was greedily eaten by his pigs.

CHAPTER XIII.

The Young Naturalists at Honiton.—Narrow Escape of my Sight.
—A Substitute for Percussion Caps.—The Study of Anatomy.
—Rustic Surgery.—A Rabbit Hunt.

WE were now anxious to visit Honiton, which had been recommended to us for its healthiness. We took the coach to Exeter, where we passed a night, and journeyed to Honiton the next day. We had taken lodgings in a pretty Gothic cottage which commanded a fine view of St. Cyrus, a hill clothed with wood to the summit, standing a mile out of the town. It had formerly been the residence of a miller, whose pond still remained. It contained no fish, but was admirably adapted for trout, as it had a lively stream of water running through it, which kept a slight ripple on its surface. There were no water-fowl there, although it was a good situation for them; and the only bird I ever saw on the surface was a dab-chick, which dived at my approach. The landlord was a highly respectable man, who occupied an official post in the neighbourhood; but his wife and family were untidy, and managed badly for us, as well as for themselves. The previous

summer had been wet and disagreeable, but this was succeeded by a cloudless September, and an October such as we seldom see. The woods in the neighbourhood of St. Cyrus afforded many objects of study: insects abounded; there the Red-admiral butterfly (*Vanessa atalanta*) swarmed, and there were numerous moths of large size and great beauty. The squirrel was rather common, and I had a great desire to possess a captive. One of the leading men in the town was a surgeon and apothecary, who was a somewhat singular character. He had been for seven years surgeon on board vessels trading to different parts of the world, and was four long years on board a whaler.. He might have told many anecdotes of his experiences, but he was so extremely taciturn that it was difficult to extract from him the story of his life; but he would now and then open his mouth and show that he was well informed on many subjects; from him I got many chemicals which aided me greatly in my researches. I was anxious to make chloro-chromic acid, and was heating the mixture in a retort necessary for its formation, but neglecting to supply sufficient condensing force my retort exploded and a quantity of boiling acid was thrown with great force into both my eyes; the agony I suffered was intense; standing beside me was a large tub containing many gallons of a weak solution of carbonate of soda, which was

being used for restoring the colour of cloth; into this I plunged my head, and, holding my breath, opened and shut my eyes several times in the solution. I got instant relief, and lifting my head out of the soda I continued to bathe my eyes and face with my handkerchief dipped in the liquid. I had most mercifully, but most narrowly, escaped the loss of my sight. The strong acid had been neutralised by the alkali, and thus I was relieved from its corroding influence. I used to go out shooting with this man and his son, for he rented the tenth part of a manor in the neighbourhood, which afforded abundance of rabbits, hares, and partridges.

This manor, lying at some miles' distance, was seldom visited by me. One Saturday afternoon, George, the surgeon's son, and myself, walked to the shooting ground, taking a young pointer with us. We started lots of game, at which George fired, but only discharged once and missed; for, to our disappointment, we found that the caps were so bad that they would not explode. I recollect that I had with me several congreve matches, the heads of which we took off and put into old caps, and so we were enabled to fire the gun, and killed a blackbird. We gathered a quantity of mushrooms in a wood, which George said were wholesome. Some were of a rich orange, others shone like ivory, and one had a fine violet tinge. He afterwards told me

these, when cooked, had a delicious flavour, and his father and mother supped off them. Most persons reckoned them vile toadstools, utterly worthless, and virulent poisons; but his father, having a little botanical knowledge, had taught him to distinguish between the wholesome and poisonous species.

The number of valuable plants which the English poor reject as food is astonishing. A large number of fungi and seaweeds, which are wholesome and nutritious, are spurned by them; and many valuable vegetables, such as mangold-worzel tops, Swedish turnips,—which are much better than white turnips, sorrel and dandelion, whose leaves afford a wholesome salad, and whose roots, when roasted and ground, form a useful addition to coffee. A wholesale chemist once assured me that he usually procured his chicory-roots from Covent Garden market, that they commonly had no leaves attached, but that he once detected those of the dandelion; and, on complaining, was told that this plant and chicory were the same. “But,” said he, “the flowers are so different; one is yellow, and the other blue.” “You have nothing to do with that,” was the rejoinder; “the roots, I tell you, are the same.”

This surgeon was very good-natured, and disposed to be kind and obliging to me, and gave me the use of some of his apparatus and laboratory. I anatomi-
mised a kitten, and dissected the odorous pouch of

a pole-cat, with his assistance, and was admitted into the mysteries of the inside of a tortoise. Sometimes my friend would be called away to give medical advice, and I would sometimes join him. A young man had a tumour on his finger, of a pear-shape, and swollen two inches long by one broad. The surgeon decided on amputating the finger at the second joint, and, as his assistant was out, he asked me to hold the fellow's arm. It was in a wooden frame, for he had not been able to use it for months. The scalpel was got ready, a ligature tied above the joints, and in two minutes the finger was off. It was bound up, and the man mulcted of ten shillings for the operation. On another occasion a stout-looking rustic called to be cupped, which, he said, he regularly submitted to in the spring and autumn. "This is a guinea a-year for me," said the surgeon, "that I am as sure of as if it were from funded property." A young man who, from tooth-ache, had not slept for the last week, had courage to have two teeth extracted; one of which was a grinder in the upper jaw, of vast dimensions, but worn away and hollow to the root. The hero, as he might well be called, sat down in the chair, which had a strap across the arms. This, the surgeon said, he found convenient, for patients were sometimes very restive. The forceps were applied, and a tremendous pull given; not a groan was heard; another tremendous

tug with both hands followed—no effect. “Pull me back the next time,” whispered the surgeon to me. I laid hold of him, and this time, “with a long pull, and a strong pull, and a pull all together,” the crown of the tooth was nipped off, and the poor patient shivered and shook, but did not groan. A larger and more powerful pair of forceps were next procured, the gum was deeply lanced, and I, as before, laid hold of the surgeon’s skirts. “Pull away, my boy,” said he, and he sprang back, this time dragging the patient and chair a full foot across the floor. The gum was more lanced, and by a slow process, resembling that of the extraction of a rusty nail from a log of timber, the tooth was gradually taken out, and the shilling was won.

One afternoon George and I started for a rabbit hunt. We reached a warren some few miles distant, where the “short tails” were very abundant. We had taken a net and two ferrets with us, as well as a large bag. Some good, comfortable-looking holes having been selected, the ferrets were muzzled and turned in, and the hole netted, and down we sat. We were not long in seeing a fine male rabbit escape from the hole and enter the net, closely pursued by the ferret, which vainly endeavoured to shake its muzzle off, and, by its contortions, was very diverting. It was agreed that none of the rabbits were to be killed, but all were to be taken

alive for future sports. George seized hold of the rabbit, and turning the ferret into another hole, he placed it in the bag, carefully tying it up in a piece of netting. The next two holes were uninhabited, and the ferret soon came out in disgust. We tried another part of the warren, close to a high hedge,



A Rabbit Hunt

and we soon drove into the net a large female rabbit and four half-grown young, which were tied up as before. We spent two hours in this way, obtaining in all fourteen rabbits, large and small. The two ferrets being put into a large hole, after a few minutes uttered cries of distress, and the smallest of

them rushed terrified into the net. A slight bark was heard underground, and the next minute the head of a fox peeped out of the hole, apparently astonished to find its exit stopped by a net. It had the largest ferret in its mouth, but on sight of us the fox let it go, and rushed back into its hole. The ferrets would not enter that hole again, and we longed to bring reynard out. We fired a blank cartridge down the hole: reynard barked and groaned, but did not budge. I next got a quantity of sulphur and charcoal, which had been mixed for smoking wasps' nests. This we lowered about four feet into the hole, which was as far as we could reach, and igniting it, we, with the gun heavily charged, waited at the distance of a dozen yards. We heard the fox coughing underground, and after a while he poked out his head from the hole; but, seeing us, started back and retired into the recesses of his fortress to die. We got home, and, to the astonishment of my companion, more than half the rabbits were suffocated, and among them the female and her young. A tremendous rabbit pie was accordingly made, which served the surgeon's family for some days. About ten days after, on bidding the place a final adieu, I peeped into the fox's hole, from which a putrid smell escaped. I had then no doubt that it was reynard's grave.

George had a little garden expressly allotted to

him, which had produced that season abundant crops of fruit. He was industrious and methodical, and made considerable sums by the sale of his early peaches, grapes, and cucumbers. As late as the month of November he had ripe red currants and raspberries, which were kept from the frost by woollen coverings, and retarded in their growth by the use of solutions which his father prepared, and of which I could not get the recipe. Favoured by a southern exposure, and a particularly valuable stock and good management, he had that season reared an enormous crop of rich black grapes. For these he had got two prizes, and £13 for a selection of his finest bunches, and had made about half a hogshead of wine, which, with the aid of a few chemicals, he hoped to pass off as sweet Constantia. George was not neglectful of his studies, and it was his father's intention to send him to Edinburgh to study for the medical profession.

CHAPTER XIV.

Fishing in the Otter.—An Eel Hunt, and Marvellous Take of Fish.—The Natural History of Weymouth.

NEAR the cottage where we lived was the River Otter which afforded tolerable fishing. A small weir, under a bridge, kept up the water which fell over it into a large pool. There I often went to fish, but seldom caught much, a few small dace, one trout, and a quantity of bleak, a pope, and a roach, were my complete list. My fishing tackle was bad, and my flies were worse, and I had no practical friends to apply to. I once felt a tremendous pull at my hook. I placed myself firmly on the bank, gave my fish the utmost extent of rod, and waited the result; the pulling became harder, and I felt sure I had got a twenty-pound salmon at least, when out flew the top joint of my rod and was pulled violently down the stream. I watched it float with great velocity down the current, and followed it for some hundred yards. It was apparently dragged by some powerful force exerted under the water, at last my rod stopped, caught among some reeds. I looked

backwards and forwards, and at length saw beyond me, in an inaccessible marsh, an otter, which had just landed with a large fish in its paw ; *this otter was my twenty-pound salmon.* I had some difficulty in getting the top part of my rod, and feared I should lose it. An old fisherman came up to me who had been more successful than I, and was returning with a full basket. I wanted a piece of string, to which I thought if I attached a stone I could throw it over the rod and thus drag it ashore. I had no string with me, and all my line was in the water, but the old man lent me his rod and line, and with it I got my own ashore. I found the hook and gut had been at length bitten off by the otter. This old man was very good-natured, and took me to one or two pools, where the fish, though small, were greedy biters, and I caught them by the dozen ; they were about four inches long, and of a species unknown to me. This man was full of anecdotes of grand captures, and invited me to join him in an eel-hunt the next day. A small rivulet crosses the lower part of the town ; this had shrunk to very narrow dimensions on account of the dryness of the weather, and the fish that were usually found there had entirely disappeared. These, the old fisherman told me, had congregated in a deep subterranean pool, where they were, he said, “as thick as herrings in a barrel.” I went accordingly to this hole of a

pond, which had formed the lower story of some building, but had become filled with water and so converted into a pond. It was being pumped out, and the old fisherman had beforehand offered ten pounds for the fish it contained ; this being thought a ridiculously high price was at once closed with.

We waited until all the water in the receptacle was drawn off but about two feet, and then the old man waded in. The chamber was about twenty feet by eighteen, and about the same depth. Its walls were clothed with green weed. I got upon a wall which was just out of the water, and gazed into the basin which appeared a perfect swarm of fish. I waded in two inches above the knees, and could hardly stand for the wriggling mass of eels. I noticed one or two savage-looking pike, and fearing they might bite me, I withdrew to the wall. One followed me, glaring as fiercely as a fish could, and making a desperate spring, leaped high and dry on the top of the wall. It was a three-pound pike, and I secured it by standing on its tail. The water was still further drawn off until there was only a few inches left—one moving mass of eels, roach, loach, carp, pike, tench, and dace. The old fisherman could hardly contain himself with astonishment ; he had ordered two market-cars to convey the fish away, but this was not enough. He packed thirty large baskets of eels in one van, and sent them to meet the train for

London. He got, in all, many hundred-weights of fish, being the greatest capture ever made in the neighbourhood. Nine-tenths of the amount were eels, but there was about one hundred-weight and a half of carp, and as much more of other species. This had been a suspected preserve for many years, but the dry weather had caused the fish for miles to congregate in it. I returned home all slimy, and a fearful figure of dirt, but immensely excited with my day's fishing, which, had I not seen, I should not have believed.

The weather, as the month of November approached, being very damp and rainy, we thought it would be advisable to remove to a less wooded district, so accordingly we mounted the Royal Mail coach, which conveyed us to Dorchester and Weymouth. The weather was cold, and we at first thought there would be considerable risk incurred in travelling on the outside of a coach so late as the month of November; we, however, wrapped ourselves up well by putting on treble garments, and so stood it very well. The air was particularly fine on the high downs between Axminster and Dorchester, and the journey was pleasant. The coach stopped at Charmouth, a locality rich in objects of geologic interest, and many were the specimens which children and dealers thrust forward for our purchase. We got a glimpse of the sea at Lyme Regis, and of the land-

ing-place rendered memorable by the visit of William III. as a deliverer and conqueror. Some friends had been written to to take lodgings for us at Weymouth, but we had some difficulty in finding them, until at last they conveyed to the hotel where the coach stopped, the required address. It was not till after dark that we were comfortably ensconced in a house which was not fifty feet from the harbour at the back, or the same distance from the sea in front ; it, in fact, stood on a peninsula, and went by the name of Devonshire Buildings. We were at first tolerably comfortable, but the mistress of the house, thinking we were simple and unsophisticated people, began to practise those arts and tricks on person and property which are supposed to be characteristic of a sea-side lodging-house keeper ; but my thoughts were mainly bestowed on things of another character. I took several walks of considerable length in exploration of the neighbourhood. By crossing the harbour, a quay on the opposite side was reached, which led to Weymouth proper, the side on which we were being called Melcombe Regis. The Nothe was reached by ascending a hill. It is a fine promontory with a breakwater at one extremity, but with rocky cliffs towards the south-east. It was clothed with pasture ; but there were occasional clumps of furze and hawthorn, which served to relieve the otherwise dull aspect of its sides. This

became a favourite walk of mine, and as the spring came on, afforded me many curious objects of study. In a crevice of the ground, in the ensuing summer, I discovered the nest and six eggs of the Rock Pipit (*Anthus obscurus*), a species which was then entirely new to me, but the eggs were too much incubated to be blown by unskilful hands like mine.

Being in very delicate health, I could not bear much exposure, but taxed my walking powers to the utmost in my various rambles. I found many little shells in such abundance on the beach below the Nothe, that I could have filled a quart measure in a few minutes. These were of the commonest species of *Littorina* and *Trochus umbilicatus*, many of them having the living animals in them. I boiled them, and found them palatable, but inferior to the Periwinkle (*L. edulis*). I found a variety of (*L. littoralis*, with brown bands, which I have never obtained since, and enormous examples of *Nassa reticulatum*, nearly two inches long. The *Purpura lapillus*, or Dog Whelk, was very common. I crushed some of these, containing the live animals, with a hammer, and squeezing them in a cloth, I hung the latter out to dry. It became streaked and blotched with crimson colour. This was one of the dyes used by the ancients, and is of a similar character to the purple of Tyre. I visited several shops in the town, and purchased a few shells and

fossils, but got little information. The only man who knew much of these things in the town had the reputation of being a crabbed and overreaching character, which was well maintained many years after. A cutting was being made for the Weymouth and Dorchester Railway, and this exposed the Oxford clay, which abounded in ammonites, coprolites, and crystals of gypsum. This I at the time mistook for talc, from its transparency and property of cleavage. I split some large pieces of it into thin plates, with which I glazed a turnip lantern, and formed lights for a model ship.

A steamer plied between Weymouth and Portland, and for the small charge of sixpence we were conveyed from the harbour to that island. Portland is a very interesting place, and well worthy of careful examination. The breakwater was in course of formation; I paid several visits to it, and walking on it as far as possible, enjoyed a fine view of the esplanade and bay, the burning cliff, St. Alban's Head, and other points of interest, as well as the rocky coast of Portland, stretching to the south-west. The Portland oolite affords numerous fossils, but I was not fortunate enough to find many of them. A few casts of *Trigonia*, *Turritella*, and other whorled shells, fragments of crystalline carbonate of lime, absurdly called petrified water—both in the form of amorphous stalactites, crystalline stalactites,

and needle-shaped crystals—were all we obtained. The most interesting object I saw at Portland was the remains of the trunk of a large fossil tree, which was about twelve feet long and ten or twelve inches in diameter. Of this I obtained fragments. I made several excursions in the summer to Portland, and finding the cowslip in great abundance, gathered some pints of its petals, of which I made a greenish-yellow tincture, which possessed slightly soporific qualities. A small species of rose grew abundantly on the slopes looking towards Weymouth; it had white flowers and a delicate odour. This rose has been well-nigh extirpated from this locality by the erection of batteries intended to command Portland Roads. The Nothe also has lost its charms as a resort for the rambler, having become a fortress.

CHAPTER XV.

The Handsome Waterman.—A Nice Row.—Sandsfoot Castle.—An Interesting “Find” of Shells.—The Loss of the “Amazon.”—Six Lessons in Flirtation for a Guinea.—The Sad End of a Flirt.

I STROLLED upon the quay one morning in search of amusement. A large portion of the harbour was devoted to small boats and yachts, which rode to and fro at their moorings. As I walked up and down, I watched an old man washing his yacht, which was yawl-rigged, but it was in such a bad state of repair that, in spite of its cleanliness, it had not a tidy appearance. The old man observing me, left his yacht, and came ashore in his punt, thinking that he might get a fare. “Fine day for a sail, sir,” he began. I thought it was too cold and too rough, and we entered into conversation. He had, he said, the finest sailing-boat on the quay, meaning the small and shabby yacht I have just described. For the hire of this he asked five shillings an hour, but he had a small punt which he would let out at a much lower rate. It was fine, clear, wintry weather, but the wind was blowing

hard. I, however, longed for a row so much, that I was persuaded to go. My great wish was to get to a locality where shells abounded. I took a little bag and tin-box with me, and got on board the punt. A short chopping sea was running, and I soon began to feel dizzy, but this did not prevent me from plying the old man with questions. He was a very fine-looking old man, and soon told me he was called "the handsome waterman." Being in his early life liable to seizure by the press-gang, he petitioned his Majesty George III., who granted him exemption by sign-manual. "I was then," he said, "a wonderful favourite with the ladies; lots were in love with me; and any girl I liked was ready to strike her colours at my feet. I could show you," said he, "my hat full of love letters." He rowed on, and landing me at Sandsfoot Castle, he took me to some spots which afforded several species of Belemnites, which, said he, "were the arrow-heads used by the ancient Britons fossilized." "The ignorant," he said, "supposed they were the thunderbolts of Jove."

This old castle is an interesting ruin. It was built in the days of the Tudors, and dismantled in those of the Stuarts, but it still remains a ruin, surely illustrating the decay of those mighty families who have left an impression on the chronicles of time, as enduring as the Portland stone of which

the castle is built. I made frequent visits to this ruin, on one occasion by moon-light. Hearing a shriek, I turned round, and saw a large bird fly from its resting-place on a large block of masonry.

"The moping owl *did* to the moon complain."

Putting to sea again, we landed still further west on the Smallmouth Sands; there I looked for shells, but found only a few of *Solen siliqua*, *S. pellucida*, and *Mactra stultorum*. I was beginning to fear that I should not find anything of value, when I came suddenly on specimens of *Marginella levigata* and *Bulla hydatis*, species which I never found either before or since, and among the sand above high-water mark, *Glaux maritima*. I returned well pleased. In after-years, when the time I spent at Weymouth was a pleasant memory, I attended a sale of pictures; there, on broad canvas, by the pencil of Richard Wilson, lay the old castle, with the sea at its foot, and a fiery sunset for its background. There was that air of still life about this picture which is so characteristic of Wilson. Yet the castle was warmly lighted, and as I looked at it through the artist's spectacles, I fancied what it was in those troublous times, when the last breaches were battered in its walls, and fire flashed from its battlements.

We made several excursions to Portland pebble ridge, and walking along the greater part of its

extent, we were pleased to observe how the pebbles, sifted through the meshes of the waves, are assorted according to size. At Portland they are as big as a child's head, and gradually become smaller, until at Abbotsbury they appear as sand. We found several translucent pebbles, such as in Scotland are termed "chuckies;" they are a sort of very coarse chalcedony. I observed and brought home with me the skull of a guillemot, beautifully white, being picked clean by insects, and bleached by the sun. I never saw a skull more perfectly clean. I observed plants of the seakale, which is found in few localities. I noticed several beetles of eccentric forms and vivid colouring, but lost the specimens I captured.

On one occasion I visited the pebble ridge with a party of friends, the weather had been stormy, and floating débris was abundant, among which we observed several splinters of mahogany, and large quantities of charred wood. Just at this time hundreds of families in England were agonised by the account of the sufferings of those on board the steamship "Amazon," which was burned in the Bay of Biscay on her passage to the West Indies. Various undoubted relics of this ship being washed ashore at this point of the coast, and among them a keg bearing the ship's name, we were induced to make careful search among the weed. There we found charred mahogany, of which we took specimens.

Early in the spring we removed into more commodious lodgings, situated in a very central position; but so near the sea that the roar of the waves never ceased, and in stormy weather pebbles were driven from their crests to our windows like a storm of hail. We gradually got accustomed to the noise of the waves. We were just one year in these lodgings, and we were glad indeed to leave them, for being permanent lodgers our comfort was but little considered. The parlour apartments were taken in the beginning of summer by a clergyman's widow, of about thirty-four, with her son, her daughter, and her maid. The daughter was a lively, pretty, and intelligent girl, who was a most amusing companion. We became slightly acquainted with them. The mother was somewhat sedate to her own sex, but was most lively and voluble with the other. Minna, the daughter, used frequently to come into my little study where I arranged my specimens, bringing little Teddy, her brother, about a year younger than myself, but about half my size and weight. He was precocious, but mean, artful and spiteful: one day I was everything to him, and another day nothing. Minna and Teddy had little respect for their mother, and would ridicule her in every possible way; the principal excuse for which lay in the woman's own folly. She often made herself very ridiculous, being very vain and capricious.

"Mamma," Minna said, "is a great flirt, and goes very often to see the Misses Smith because Mr. Smith is there; she detests the ladies, but is devoted to him. Mamma must always have some one to flirt with. She lives in an atmosphere of flirtation; it is all one who it is, rich man or poor man, from eighteen to eighty." "But do you never flirt?" said I. "Oh, yes, I am as fond of it as mamma; and there is Mr. Roden, nurse says that she does not know whether he is paying his addresses to me or to mamma," and Minna's eyes sparkled, and she burst into a loud laugh. "When I am of age I intend opening a school; for," said she, "I wish to turn my talents to account. But until that time I must do something, of course. I should like to have a school of flirtation; will you come and be my pupil?" I was an intensely shy boy, and said I thought I should be a most inapt scholar. "But," continued Minna, "do come to be my first pupil. Give me a beginning and I shall get a large school in the end." Minna held out her hand, and pressing mine warmly, said, "Will you write a card for me, and say, 'The daughter of a clergyman having some unemployed time would be willing to give lessons in flirtation to a few young gentlemen; terms, six lessons for a guinea. Apply at Younghusband's library?'" I wrote this on a page of a copy-book, and she hung it outside my door.

"You must be a young man in search of instruction," and she led me outside the door. I walked down the stairs and came up somewhat pompously, and knocked with my knuckles at the door. Teddy opened it, and I asked, "Is this Younghusband's library?" "Yes, sir." I walked in and asked if there was a young lady there who gave lessons in flirtation. Miss Minna was crouching down on a stool behind a towel-horse which I had covered with calico and studded with pictures cut out of the *Illustrated London News*, so as to form a miniature pictorial screen. I asked for the young lady, and was shown into her room, or rather, the screen was removed. "Are you the young lady that gives lessons in flirtation?" said I; "six lessons for a guinea?" "I am." I said I should like six lessons, and demanded to know when they should commence. "If you like I'll give you the first lesson now." I said, I should like to begin at once. "But," said she, "perhaps you will kindly pay first." So saying I took out of my pocket a small brass coin and handed it to her. She smiled and curtsied, and, requesting me to be seated, she began. "Flirtation is of two kinds, by word and by deed. There are many that have not much to say that learn the last quickest. Which would you like to begin first?" I said by deed, and I hoped words would come afterwards. Minna next said, "The art

which you wish me to teach you, sir, is a noble one ; it is indispensable to those who would mix agreeably in society, and is one of those which distinguishes the gentleman from the savage.” Minna laid hold of my hand ; this she squeezed and stroked, and



Six Lessons in Flirtation for a Guinea.

gazing into my face, she, like a very intelligent dog, did “everything but speak.” Then drawing my hand towards her heart, she sighed, and looked up in my face. “This,” she said, “is the first lesson.” In the second she laid hold of my arm, and putting it round her waist, she looked kindly and complacently

at me. In the third lesson she was very voluble. "I could not think of going to the theatre without you ; I should be dull, I should be distracted between the acts ; but now come to church, sweet, and hear the Bishop of Durham." The fourth lesson was a sham quarrel, in order to have the pleasure of a warm reconciliation. In the fifth the advantages of rivalry were shown, which was supposed to induce more cordial intercourse. In the sixth all was pleasant ; I had my head on her lap, she was combing out my hair and alternately chaffing and praising. "What a fine head of hair you have, but I don't like your way of doing it, you must let me take it in hand if you want to be my particular friend." And so ended my guinea's worth. All this time I was very quiet, feeling very shy and awkward ; not so Minna.

Minna was successful in her school. She had two of the most lovely girls for pupils I ever saw, and two very gentlemanly and good-looking boys. They received more lessons than I did, and became more proficient. Minna appeared one day in a white gown, and went through the matrimonial service between the two couples.

This preternatural development of "fast life" did not end well. The eldest of the lady pupils, after many years of flirtation, married miserably, but was widowed early ; and the second, after a questionable

career, at length married a mulatto. Her fate was worse than Desdemona's. I heard accidentally, many years afterwards, an account of Minna's after-life, which greatly shocked me.

Her mother's death, when she was sixteen, caused her to be entirely under the care of two maiden aunts, one of whom, becoming a Roman Catholic, took her to travel in Spain. There Miss Minna met with a handsome young Spaniard, and forgot "a faithful swain" chained to a London desk. Her aunt, observing her flirtations with him, forbade his visits; but Minna, detesting the government of aunts, expressed a wish to board in a convent. She was a Protestant, and her aunt, thinking that perhaps she might be thus induced to become a Roman Catholic, consented. The young Spaniard visited her frequently, and the life she led was very happy. She changed her religion in order to have more perfect sympathy with her beloved; when, to her horror, she discovered he was a priest. She was at first stupefied, and then disgusted; but at last, feeling indifferent about everything she had, was induced to take the veil. Conventional discipline did not break her lively spirit, although she was for a time depressed. She was treated with great consideration during her noviciate; but after her final seclusion from the world, rigorous duties commenced, at which her spirit inwardly rebelled,

although she managed to conceal most of her feelings, knowing that her sufferings would be aggravated by disclosure. She looked back with sorrow and regret to the days when she walked with Samuel on the banks of the Thames, and managed to convey a letter to him, in which she expressed her bitter regret at the step she had taken, and the intense sorrow she felt at being separated from every friend with whom she could have any sympathy, and her disgust at being compelled to lead a single life. She implored Samuel to rescue her from her miserable position; but said, if she became his, it must be without fortune, for she had resigned all her property on taking the veil. Samuel, at great inconvenience, set off for Spain. He conveyed letters to her and conversed with her through a grating, and made an appointment to meet her outside the convent gates, where she should change her female for male attire, and, as a more complete disguise, assume a beard and moustache.

The convent, which had formerly been a fortress, was nearly surrounded by a moat, and this poor Minna had to cross. Samuel and she made efforts to corrupt the servants at the convent, but they were too thoroughly priestridden to listen to golden offers. Minna's only chance then lay in her personal efforts. She was a strong and active girl, full of spirit as well as tact, and willing to risk

her life to obtain her liberty. Her cell being situated near the roof of the convent, she one night removed some of the tiles, and, forming a passage, dragged herself through it and looked out on the moat: cross this and she was free. The parapet was about forty feet from the water, but there were numerous projecting mouldings of a rugged character, which formed steps, as it were. She thought at first of attempting to lower herself by a rope formed of her bed-clothes; but this was difficult, owing to the projecting stones of the wall; for the night was so dark she could hardly see them. Her doubts and fears on this score were spoken to Samuel as he sat under a willow tree waiting to rescue her should she want assistance in the water. Her second course was to throw herself headlong into the moat, and trust to the powerful arm of her lover for safety. He thought that, with the use of the rope, there would be less risk to her life; and she making it, as she considered, fast, jumped over the parapet; but her feet catching upon a projecting stone, she fell head downwards, and hit her temple violently against the wall. She struggled for a few moments, when the rope broke, and she fell into the moat. She was stunned, and perhaps somewhat disabled with the fall, so that when she reached the water she could not swim. Samuel threw himself in, and endeavoured to swim in the direction in

which he heard the splash, but could not find her. She had sunk like a stone. He swam about for some minutes, but hearing no noise, he in despair landed where he had left his clothes. He knocked at the convent gate, but had some difficulty in rousing the inmates. He explained the story frankly, being indifferent to any responsibility he might incur. Minna's cell was searched, the hole in the roof was found, and the next day the moat was dragged, and Minna's body was found. Samuel was quite prepared to suffer imprisonment; but, to his surprise, the abbess and nuns said they were not astonished at Minna's suicide, for they had noticed lately that her mind was quite gone, and they were about putting her under restraint. Samuel viewed her corpse, and returned to London, having seen the end of his first and last love.

CHAPTER XVI.

More Boating.—An Unsuccessful Patent.—Dredging.—A Bargain in Shells.—Botany and Zoology at Portland.—The Smugglers.—Polly Gotobed.—A large Dory and Conger.—A Stout Lady.

In the middle of spring I began to go frequent boating excursions, and although apt to be unwell on the water, yet was so much interested in things that I saw on it, or in it, or heard about it, that I bore the inconvenience. I found a very respectful and worthy waterman, who rejoiced in the possession of a tub of a boat, the breadth of which was much greater than usual. It was built for stout elderly people, and resembled them in shape, age, and slowness of motion. I preferred it because I could take so many liberties in it, and there was much room for my boats, cannons, and dredges, and above all, I liked Caddy the waterman. The first excursion I made was up the "Backwater." Borne on the flood, we reached its farthest extremity, near the little village of Radipole; we landed, and explored the neighbourhood. On the return back I noticed a tall chimney, and inquired what it was.

"Years ago," said Caddy, "some gentlemen formed a company to make oil from the shale found near the burning cliff, but it did not pay, and so the works were shut up." This must have been full twenty years before. Large quantities of oil are now made from shale of a similar character, which *does pay*, for it illuminates most houses; it is the paraffine oil of commerce. But many who embarked in this speculation lost their money, and were laughed at by those who were too stupid to see what efflorescence lay dormant in this crushed seed of industry. We noticed a number of Jack snipes flying about among the mud-banks. I inquired where these bred, and was told they went north in the summer.

A few months hence, after this, I went on my first dredging expedition with Caddy. We sailed to within a short distance of the island, or peninsula, of Portland, close to the wreck of the "Abergavenny," a fine East Indiaman, of whose loss he gave a graphic account. He described the manner in which she was blown up some time after she foundered, in order to obtain her treasure, and how the fish, killed with the shock, were picked up in large quantities as they floated on the surface of the water. This appeared to me to have an important bearing on the question of the susceptibility of fishes to sound, for most of the fish picked up, although dead, had no

apparent external injury. Just when we reached the wreck we cast down the dredge. A good breeze was blowing, and I was not at all comfortable, but the



Pecten opercularis (Weymouth).

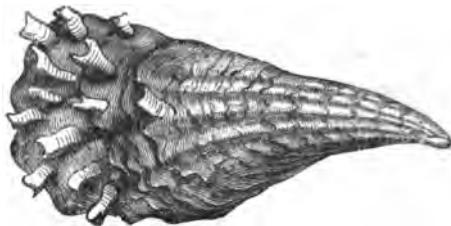
number of shells and other curious specimens I found induced me to bear it. I found *Murex erinaceus*, *Turritella communis*, three and a half inches long. *Tro-*



Helix aspersa (var. *Scalaris*).

chus magus, and, above all, *Pinna rudis*, which I had never seen before in a living state. One specimen was very large, being about one foot four inches

long. The eggs of *Murex erinaceus* were dredged up adhering to an oyster-shell; but these were for a long time unknown to me. We obtained *Echinus* of two species, and several small fish which I did not preserve. I returned with a large bottle and basket full of specimens, but looking as white as a sheet,



Pinna rudis.

and so giddy I could hardly walk. I spent some hours in cleaning my specimens of shells. There were only about twelve species, but in some cases there were hundreds of each.

On making inquiries among the fishermen for shells, I was told of a sailor who had brought some from Australia, but found he had parted with all his specimens except an enormous valve of a pinna, almost as tall as myself, which the natives, he said, used as a paddle. For this curious specimen he asked five shillings; but it was too large for my cabinet. The "handsome waterman" said he had a collection of shells which he would sell cheap. I

examined them, and finding about five hundred examples of seventy species of the commonest sorts obtained with the dredge, I purchased them for half-a-crown, which he said was "dirt cheap." "I have no doubt I would get twice as much from that old screw of a dealer, but I detest his mean and dirty character so, that I would not give him the chance of making a ha'porth of profit out of me, but would rather give them away to a small gentleman like yourself for the price of half-a-pound of 'baccy. He served an old friend of mine shamefully. This man brought home from New Zealand, three barrels of shells, which cost him five pounds on the spot. He was getting a lot of them for 'the old screw,' and the price of many was agreed on beforehand ; but when he came, 'the screw' did not want them, said he had enough of them, but waited till my friend was so hard up, that he was glad to sell them for as many shillings as they cost him pounds. It was a bad season amongst ourselves, and we were all nearly starved out, but that dog trick has lost that 'old screw' many a good shell. I should not mind running a 'Thorny-woodcock' through his arm any day."

I made another excursion to Portland, where I came upon a large bed of Henbane (*Hyoscyamus niger*), growing amongst thistles. It was the first time I had met with it, and I gathered a quantity of its leaves. I noticed large numbers of the Painted

Lady (*Cynthia cardui*), which alighted on the stone dykes, in company with the Wall Butterfly (*Lasiomata megæra*). Portland is but scantily furnished with animal and plant life; but possesses some peculiar forms. In the "valley of rocks," I found a specimen of *Helix nemoralis*, the whorls of which were separate, like a *Scalaria*. This specimen, which was one of the most valuable I ever obtained, was broken on the way home.

In the height of the mackerel season I went fishing with Caddy. We sailed up and down Portland Roads. There was a gentle breeze, "about a nor-nor-west, sir," as he said, and so the water was smooth. Caddy was more than usually loquacious, and during the intervals between the fish-catching, related many anecdotes of his life. In his early years he was in the navy; but being soon paid off, he entered the coast-guard. The high duties which were then placed upon foreign merchandise proved a strong inducement to smuggling, which was largely engaged in by many of the respectable inhabitants of Weymouth and Portland, and among these by Caddy, who, he said, did not see any harm in "free trade." He was a good while on board a revenue cutter, and there he managed to smuggle. He, at first, thought his position as a "preventive man" ought to prevent him from taking any share in "the trade," but his scruples were overcome by some of his relations, who

engaged in it in the same vessel with himself. He having several times related the story to me of his temptation and his fall, I will give it somewhat at length.

Being out of employment, from the loss of the cutter to which he belonged, he thought he would call at a friend's house, who lived at a village between Dorchester and Weymouth. He found his friend, whose name was Bill, and his friend's cousin, whose name was Dick, and Dick's sister, all comfortably living together, for the men had a week's holiday. Caddy was invited to stay the night, and made himself quite at home. Dick's sister Polly was a very industrious young woman, with an apple-face and a nose, as Caddy expressed it, "turned up like a boat-hook." Caddy was much the best looking of the party, and Polly was particularly attentive to him, in compliment, he thought, to his friend Bill, to whom she was engaged. Caddy expressing a wish for employment, was advised by Bill to accept service in the same cutter in which he was employed. But Caddy feared that his wardrobe was not in sufficiently good order for the voyage. "They'll give you clothes," said Bill. Polly heard this, and it doubtless made a deep impression on her mind, for at parting with Caddy, she presented him with a large bundle of necessaries for the voyage. They all walked towards the quay, to join the cutter, which

was lying in Weymouth harbour. Being somewhat earlier than the appointed hour for joining the ship, they sat down on the quay, and Dick began to examine Caddy's bundle. He took out four shirts, marked with Caddy's name, four pocket handkerchiefs, four pairs of stockings; a tart



The Smugglers.

in a tin dish, a dozen of apples, a flat tin bottle of gin, and a pig's bladder of tobacco. "Well, Caddy, you're set up," said Dick. Bill looked very red, and stamped and swore he was. Dick looked through the shirts, and, pinned to the breast of one, near where the heart, in Polly's system of anatomy was

supposed to lie, he found a three-cornered note, which he read aloud, for the benefit of the trio. It began :—

“ DEARLY BELOVED,—Do not let tears soil your fine manly cheeks ; we must part for a time, but we'll all meet again. I have tied up a few things that may be useful to you ; think of me when you are on the deep, deep, sea. Don't give your confidence to Bill, he is a bad man ; he finds a sweetheart in every port, so is false to me. I am sick of him, and am going to leave his house, and must have a home. Dear David, I would gladly make a comfortable home for you, I have *heighty* pounds ten. My feelings won't allow me to say more, but I am yours, if you will have me,

“ POLLY GOTOBED.”

Dick burst out into a loud laugh when he heard this ; but Bill began to cry, being quite upset. Dick now began to condole with him, and said Polly, although his sister, was scarcely worth having. Bill abused her soundly, and then blamed Caddy, who frankly owned he “ didn't care for her.” They went on board the cutter, and soon forgot their private affairs in the ship's duties. They landed at Jersey to take in water, and most of the men *took in* things of greater value. One man, instead of filling a cask

with water, filled it with rum, on the chance of its not being required for use ; and as he was storekeeper, he contrived to keep this barrel for the last, until the ship put in at Plymouth. Being one of those sent to fill the casks with water, he said that this one required coopering, for it had leaked out on the voyage, and so he was allowed to carry it to the other storehouse, where he emptied it into a large oil-can, and so carried the contents away. This man made three pounds profit by this transaction, but ran immense risk. This success, however, fired Caddy's imagination, and he determined to engage in smuggling, himself. He, on the next visit of the cutter to Jersey, purchased, what appeared to be, several large hams, sewed up in canvas. There was but little flesh on these hams, for this had been cut away, and a quantity of lace rolled round them to the value of some fifty pounds. Caddy had been employed on his enterprise by a female lace dealer at Plymouth. Thinking there might be some danger in attempting to land these *hams*, Caddy took the lace off and wound it around his person ; he had five pounds' worth on each leg, and thirty pounds' worth on his body. He put on a very loose pair of trousers and an extra shaggy coat, and landed in safety.

Just then there was a very hard pull at my hook. I hauled in my line as fast as possible, and found I had caught a fine " pollock " whiting. On another

occasion I went out fishing, when we caught a good many of the sea bream, or bass, a gurnard, and a good large fish of a bright yellow colour, and shaped somewhat like a perch. I showed it to several of the fishermen, but it was new to them.

Caddy was full of stories about his marvellous success in fishing, and I often wished to be equally successful. I was one day talking to him on the quay, when I saw a large fish swim up the harbour. It kept on the surface of the water and made a great flapping ; it was evidently a large flat fish. Caddy put off in his boat, I jumped in, and we pulled hard after the fish. The boat moved very slowly, owing to its build and Caddy's age ; but we neared the fish, and at length got a few yards beyond it, and in another second, it had swam close to the boat's side. Caddy had a large fish-basket, which he instantly lowered under the fish. It endeavoured to spring away, but it was too late, for up went the basket and the fish. It proved to be a John Dory (*Zeus faber*), four pounds weight, being one of the largest I ever saw. I examined the fish minutely, Caddy directing my attention to several marks, one especially, which was that he said of St. Peter's thumb. This "John dory" he took round to the various fishmongers, and at last sold it for half-a-guinea. He assisted, some years before, at the capture of a large conger. He was fishing with

another man about two hundred yards below the draw-bridge, when he felt a tremendous tug at the hook. He hauled away, and at last got the head of the conger out of the water,—larger, he said, than his two fists. How to secure this monster was the difficulty, for he felt to haul it in was impossible with his slender line. “Give the fish line,” said his companion, “and I’ll manage him.” This he did, and his companion, taking off his hat, tied a rope of ten yards long round his body, which he fastened to one of the benches of the boat. He threw himself into the water, and dived after the fish; and seizing it by the neck, he prevented it from biting. Caddy had some difficulty in hauling in the line, but at last he brought the eel and its captor to the surface of the water. It had wound itself like a boa-constrictor round his body, and he had great difficulty in keeping it from strangling him. Caddy was afraid to draw them both out of the water, lest the great weight, leaning on one side, should capsize the boat; so he made a signal to another fisherman, who put off to his assistance, and with his aid, the eel and the man were brought to land. It was about six feet long, and weighed more than one hundred pounds. Caddy on this turned showman, exhibiting a board outside his boat-shed, inscribed, “Come and see the great sea-serpent; admission twopence.” He kept the fish like this for two or three days, when he

salted it, cut it in slices, and hung it up to dry. It fed him and his family during a great part of the winter. Caddy told a wonderful story about a large red mullet which he caught, that weighed seven pounds, and for which he got about fifteen shillings from a nobleman's steward; and how he captured a hammer shark, and found fourteen pounds of whiting and mackerel in its stomach, on which he feasted.

I had a favourite chemist in this town, as in others, to whose shop I frequently resorted. He was one day compounding some article for me, when his operations were interrupted by the entrance of a stout lady, richly dressed, who, supported on the arm of a substantial humble companion, rolled in at the door. Her motions resembled those of a cask on crutches; and, with much panting, she desired a seat. The chemist got one chair for her—it would not do; he got another—still it was not enough; but three, the good lady said, were ample. She wanted some Everton toffy; but this was far too vulgar a thing for a genteel chemist to keep. He had cayenne, peppermint, and lavender lozenges, and barley-sugar, he said with great emphasis. The old lady took a pound of the last, and a quarter of a pound of each of the lozenges. I suppose I eyed her with more than ordinary intelligence, and mentally compared her waist with that of the largest animals I had

seen. It was bigger than that of a horse, pig, or cow, and comparable only to that of a rhinoceros or elephant; her snort reminded me of a hippopotamus. She with some difficulty turned her head half round, and gazing me full in the face, said, "Here, my boy, take some of this sweetstuff." And the good lady began to talk to me, ending in a short lecture on the subtleties of lozenges and barley-sugar, and the sublimities of crystallised *glacé* fruits. "You should live in France, my boy, if you like sweets; Paris is the Paradise of confectioners." She began asking, what I thought, rather impertinent questions; but I excused them on account of my youthful appearance, for I looked two or three years younger than I was.

That very afternoon I observed my fat friend moving along the esplanade in her wheel-chair, her companion walking by her side. She spoke to me, and another long conversation followed. She gave me her card, and asked me to call. This I did, and was much amused with all I saw. "You must come and spend a day with me," said she. Three days after I was at her house at the appointed time. Not feeling very well, she was later than usual in coming down, and I was left to amuse myself with the companion, who was as intelligent and loquacious, as she was physically powerful. Her mistress, she said, was the daughter and widow of in-

fluential brewers, and had a comfortable independence of £3,000 a year. Her family on both sides of the house were stout, but she was the fattest of them, and weighed twenty-nine stone—a great deal for a woman. She was weighed once a month, but had maintained this amount for the last few years. I was taken into her dressing-room, and her various articles of clothing were shown; one skirt in particular, which took forty yards of silk. Her carriage was made for her; the door was three feet wide, and it was drawn by two powerful iron-grey horses, which might very well each have managed a brewer's dray. Her life was a sensual one.

About half-past six or seven A.M. she rang her bell and had a cup of black coffee as an awakening draught. But soon her extensive corporation craved support; she felt the necessity for something more substantial. So two cups of chocolate, a slice of hot buttered toast, and an egg were swallowed before she could make up her mind to attend to the fatigues of dressing. She had luxuriant black hair, which alone occupied her maid for an hour; and what with her bath, and other necessities of the toilet, she was not down to breakfast till ten, for she did not allow that she had had her breakfast before, but only "a snack on a tray," or what the Scotch bathing women call "a chittering piece." This meal was well served by her footman, and consisted

of the hot substantialities of the season, wine and beer being always at hand to remove the *unpleasant* taste of tea or coffee. Breakfast having been at last concluded, she would attend to business, examine her bills, calculate the interest of her mortgages, or consider new and safe investments. Her wealth increased largely every year, and she contemplated it with amazing satisfaction. At twelve, she was open to receive visits, or for a morning drive, but just before starting, the housekeeper or cook—sometimes both—took her orders for dinner. She had an exquisite taste in the flavouring of dishes, which she must needs see to herself; so more than a dozen bottles of sauce and essences were brought to her; drops were poured on a plate and mixed until she gave herself satisfaction. I witnessed this operation, for the good lady came down just after noon, and was meditating taking me for a drive, when the doctor entered. He visited her weekly, and was not long in discovering the peculiarities of her disposition. “He understood,” as she said, with great emphasis, “her constitution better than any medical man she ever consulted.” He strongly reprobated a lowering diet, for the powerful frame she had must require proportionate support. She recommended the doctor to me as the most scientific of his profession; but I already knew him, by reputation, as the greatest humbug in the town. The doctor, in return for his guinea,

would generally bring a bouquet of flowers, or some new book for the lady's perusal, and in this way his visits were welcomed.

The doctor was hardly gone when the curate of the parish entered, wearing a long and pale face, a narrow chest, and an enormous high humped nose. He came to thank her for her contribution to a local charity, of which he was secretary, and to solicit her subscription for the next quarter. The patrons of the society subscribed two guineas, the residents one, the visitors half-a-guinea; while there were donations of from one shilling to five shillings. He strongly insisted upon the merit of being a patron of the society, its venerable antiquity, having been established seven years; its great utility, and the number of excellent and philanthropic people whose names were on the list, with whom it would be no dishonour to be associated. All this the lady heard with a blank countenance. She was too poor, she said, and had so many demands on her; had heavy losses, and fewer legacies than she expected. She clearly could not afford to become a patroness of the society, but might give half-a-crown or five shillings.

The curate racked his brains for a moment, and then started on another tack. "I do not wonder," said he, "with your generous disposition, that you should have more claims on you than you can well meet; but my knowledge of your noble gene-

rosity, and disposition to make personal sacrifices induced me to call, for as a visitor we have, I acknowledge, not a strong claim upon you. You were so very kind during the severe gales three years ago, and entered with so much zeal into the management of the Committee for the Relief of the Distressed Fishermen, that the Weymouth people have quite learnt," said he, smiling, "to consider Mrs. A—— the 'Lady Bountiful' *par excellence* of the visitors." "Is that true?" said she; "well, I suppose I must make a sacrifice. I think you said you wanted five pounds to keep the institution afloat till next quarter. Here it is, even if it should cost me a dinner." The curate was profuse in his thanks.

It was too late for the lady to take her accustomed drive before lunch, so at one o'clock wine, cake, and biscuits were brought in. This was not the regular lunch, it was merely "a little medicine from the wine merchant, instead of the apothecary," which she was ordered to take four times a day. She next took her drive, and I strolled on the beach with the house-keeper. At three o'clock she came back, having made an immense circuit, and having acquired a hearty appetite, demanded her *true* lunch. It consisted of oysters and a pigeon pie, with a little stout, which she said had much more nourishment in it than wine. She next received her fashionable visitors, among whom were two families of title then visit-

ing Weymouth. At half-past three she retired to dress for dinner. She wore the lowest necked dress I had ever before seen, and the shortest possible sleeves, and, taking her companion's arm, she waddled before me into the dining-room. She wore a purple velvet dress, ornamented with satin and gimp, and a profusion of amethyst ornaments; not less than a dozen rings, on which almost every precious stone commonly worn were seen; a carbuncle brooch, as large as a half-crown, glanced fiercely on her bosom, with an attendant circle of large pearls. Her companion having escorted her to the dining-room, entered an adjoining one, and at her mistress's desire, played some pretty airs on the harp, and sang one or two drinking songs, such as gave an appetite or promoted refreshment. The dinner was varied and ample, sufficient for twelve persons—it was only intended for three. Tea and macaroons well-nigh overtook the dessert, as she retired to the drawing-room; and supper at half-past ten, with a large "night-cap," closed this *eventful* day.

CHAPTER XVII.

The Angel, or Monk Fish.—The Great Aquarium.—Making Soda from Kelp.—A Lucky Marine.—Shooting a Crested Lark and an Eared Grebe.—A Hint for Egg Collectors.

We had stormy weather in the month of June, and numbers of shells, and vast quantities of seaweed, were washed ashore. I turned over the latter in hopes of finding specimens, when I suddenly came upon a large fish four feet long, and so heavy that I could scarcely lift it. It had an enormous mouth, and a head somewhat like a dog; it had two enormous fins, which reminded me of the wings of those cherubs that we see on mediæval churches or monasteries. It was clearly the angel, monk, or devil fish, and was still alive. I took my knife and cut off its head, and ripping open its belly, I found in its stomach a number of living flat-fish, dabs, flounders, and soles, and a turbot of very small size. I found a young "angel" also, so the fish is not oviparous, but probably oviparous. I detached a large piece of the skin of this fish, which I rubbed with powdered alum and hung up to dry; it is

capable of being turned to useful purposes. I covered a toy box with it, for it looked as well as shagreen.

In the pools below the Nothe great quantities of marine zoophytes were found, some distinguished by their lovely colours and beautiful forms. Aquavariums were not then in fashion, but I, stimulated by reading some of Mr. Gosse's works, often kept fish, seaweed, and marine animals in bottles and vases of water. Being one day collecting, I was accosted by a middle-aged man, who inquired the best localities for procuring these specimens. He was very loquacious, but said he knew very little about marine animals. He said, "It is not for myself I am collecting, but for my brother-in-law, who has lately succeeded to a fine estate in Hampshire, and who wishes to form a marine garden. He has spent seventy pounds on plate-glass tanks, which he has in one of his conservatories, and he wants me to get him all I can while I am here." This was one of the first great movements in this direction. I recommended him to apply to Caddy, who took him out dredging every day for a week, and in this way he obtained a large quantity of specimens, including a number of living corals and sponges. One day I met Caddy carrying these to the hotel at which this gentleman was staying, but I never knew his name.

I had heard of the manufacture of soda from kelp or burnt seaweed, and wished to try and make some

myself. I found a heap of dry seaweed near Sandsfoot Castle ; this I ignited, and obtained about a quart of ashes. These I brought home, and boiling them with water in a pipkin, I obtained a solution of carbonate of soda, intermixed with common salt. I wanted to make pure carbonate of soda, and did not know how to get rid of the common salt. My books on chemistry gave me no information. The only course open to me, appeared to be to reduce the whole to a sulphate, by the aid of sulphuric acid, then to mix it with coal and chalk and roast it in a crucible ; next to dissolve it in warm water, and filter and evaporate it to dryness, and heat it again to redness with saw-dust in a crucible. This was fused some hours at a very great expenditure of spirit and oil in my lamps, re-dissolved again in water, concentrated by evaporation, and at last gave crystals of tolerably pure carbonate of soda. I got about the tenth part of a pound of soda, the whole of which I could have purchased for one penny, at the cost of two shillings for oil and spirit ; but I considered its preparation at all, a great triumph with my imperfect apparatus and defective recipes.

During the stormy weather in June we went to the pebble ridge, and witnessed the waves, whose spray broke over the ridge, and almost reached the water on the other side. The waves were from twelve to thirty feet high, and were heavy enough

to crush the timbers of the largest ship afloat. That night there were several bodies washed ashore, and some of them were stripped by the finders. One young woman was found entirely naked by the coast-guard, with the third finger of her left hand cut off, probably to remove her wedding-ring from it. Caddy never owned to stripping any bodies, but said he once saw a pair of trousers washed ashore, and got fourteen shillings out of the pocket. Once he found the skin of a human hand with the nails adhering to it, withered and dry, but perfect as a glove; this, his nautical superstition would not allow him to keep, and he accordingly buried it among the pebbles. Caddy, like most sailors, had his tales of treasure-trove, but he considered it more or less unlucky to find, and accordingly seldom looked for it. When he was very hard pressed, he sometimes resorted to particular places among the rocks where he was almost sure of finding silver pieces. He and his family had several times been saved from great extremity in this way; but still he did not, he said, like dead men's money. He once showed me a black dollar of Charles II. of Spain, which he had just picked up, and taking me to the spot, he, in my presence, found a small black coin of the reign of Henry VII. or Henry VIII. I shall not describe this place too minutely, for I have some thoughts of making excavations myself, being less superstitious than Caddy.

Many years before, there was a large and important discovery of gold and silver bars and coins on the Weymouth coast. A marine stationed at the barracks was observed to frequent a particular spot on the beach, and to dig and grope among the gravel and rocks. He generally left off work when observed, and sitting down near the place, lighted his pipe. When asked what he got, he answered, limpets and mussels, and sure enough he always showed a basket of these animals. This went on for about six weeks, when the marine having *exceeded* at a public-house, turned out the contents of his pocket, when several large Spanish gold coins fell on the floor. This soon becoming the talk of the town, reached the ears of the barrack-master, who himself followed the marine to his favourite spot on the beach, saw him lift a large stone with a crow-bar, and, apparently, take something from under it. The barrack-master went up to the man and asked him what he found. He said only shell-fish. He ordered him to strip and hand him his clothes. He looked through them and found nothing but a few shells, a pipe, and a crooked sixpence. The officer brought some sappers to the spot, who spent several days in excavating, but could find nothing. He next sent for the marine, and cross-questioned him privately. He at first got no satisfactory answers; but on being asked whether he had any idea of where treasure might be found, he

said he thought he had, but would not give himself any trouble about it, unless under orders. The barrack-master, thinking there was something in it, but feeling that the man would not exert himself without the prospect of reward, wrote to head-quarters in London for advice. In due time he received a letter to the effect, that if private ——, of the Royal Marines, should give information that would lead to the recovery of treasure by the crown, he should receive a reward equal to one-fourth. This being communicated to the private, he was not long in making up his mind, and that very night, a party of marines, under the command of the officer, excavated at the places pointed out by the private, and continuing their labours as long as the tide was low, they discovered several hundred ounces of silver in dollars and bars. The next low tide they removed a quantity of rock, and came upon a circular hole about a yard deep ; this was full of concreted sand and clay, and was very hard, but under it was a black mass of dollars adhering together, more than twelve thousand in number. Other excavations led to further results ; a pig of gold, weighing 30 lbs., was found, and a round plate of silver, weighing 300 lbs. The entire value recovered was £30,000. The marine received £4,000 in money, and an annuity of some hundreds a year ; besides this, an immensely large and heavy chest, which took six men to lift it, was carried out

of the barracks. This was what he had found on his own account. Having some ambition, he purchased a commission in the army, and Caddy saw him as a captain. This treasure was believed to have formed part of the lading of a Spanish galleon, which, pursued by a foreign cruiser, ran ashore. The captain finding escape hopeless, was believed to have conveyed the bulk of the treasure on land, which he buried in the hope of being afterwards able to recover it; but his ship was set on fire, and only one or two of the crew survived, who could not, or would not, give any information as to the precise spot where the treasure was concealed. I have since heard other versions of this story, and it appears clear that it is at least founded on fact.

I went out shooting several times with Caddy's son. We killed a number of the Sandwich tern, the puffin, the common guillemot, one black tern, and a lark, which he called a "horned lark;" it was, without doubt, the crested-lark, which is so rare as a British bird; this specimen being shattered to pieces, was not preserved. A Red-throated Diver (*Colymbus septentrionalis*) passed us, which was a rare occurrence in the middle of June. Caddy fired at it several times, but always missed, as his gun was foul. I was walking the next day on the Nothe, when I observed a bird shuffling among the seaweed; it was, doubtless, the red-throated diver which I had

seen before. What brought this bird to land I do not know, unless it was looking for a nesting-place. He shot an Eared Grebe (*Podiceps auritus*) this same month. I skinned the bird, and preserved it with arsenical soap; but it was at last destroyed by a cat, to my sorrow, as it is a rare species.

This summer I found a nest of eggs on the northern shingly shore, formed of clay. It was about the breadth of my hand, and cup-shaped. The eggs were of a pale clay yellow, spotted with lilac, and lilac-brown. I looked diligently for birds in the vicinity of the nest, but could see none. I brought them home, but for years they were unnamed in my cabinet; they were doubtless the eggs of the Summer Snipe (*Totanus hypoleucus*). I mention this particularly to show how important it is to have eggs authenticated by being connected by evidence with some species of bird. Had I been on a foreign expedition when I procured these eggs, they might have remained useless and unknown even in the hands of the best ornithological authorities.

CHAPTER XVIII.

The *Pliosaurus*.—A sad Destruction of Young Fish.—My Explosive Shells and Fire Ships.—Low Spirits Cheered by a Clever Goldfinch.

WANDERING one day on the banks of “the Fleet,” I came upon a fine section of the Kimmeridge clay. This I examined, and obtained several fragments of fossil bones and ammonites, and coprolites without number. These bones I have since found belong to a species of *Pliosaurus*, a genus distinguished for the enormous size of the paddles.

The winter before this a large barque arrived from Odessa, which was studded with numbers of goose barnacles (*Anatifa anatifera*) ; some of these had peduncles six inches long. I observed some barnacles floating among the seaweed ; these were of the bladder species (*A. sulcata*). I waded one day in the shallows opposite the Esplanade, where the water perfectly swarmed with small fish about two inches long ; these the fishermen called “mackerel bait,” but they appeared to be the young of some members of the herring family. It was sad to see them strewn on the shore in thousands as the

tide receded. On one occasion a seine was drawn in my presence on the Portland pebble ridge, and not less, I should think, than twenty bushels of small fish, from two to six inches long, were carted away to feed pigs. I had not then heard anything about "fish culture," but still it appeared a sickening sight. I remonstrated with the men, and advised them to throw the small fish into the sea to grow larger; but they only growled at me.

I performed some experiments this summer with explosive shells, which I made as follows:—I got a number of glass balls, about the size of marbles, and others a good deal bigger; these had a hole in each side, and were filled with a saturated solution of phosphorus and bisulphuret of carbon—"Greek fire." Passed through each hole was a small tube of the thinnest glass, open at each end, and containing a globule of potassium. Taking a crossbow, I placed the shell on it, having carefully bent it. I took aim at a quantity of floating drift-wood and shavings in the Backwater, and, fortunately hitting it, my shell was shattered by the concussion, and its contents dispersed over the wood. It did not inflame instantly, and I feared it would be a failure; but soon I perceived a spark of fire, which in another instant burst into a flame, which not merely covered the wood, but the water, for some inches round it. All the wood above the water was consumed. I next tried

a compound of phosphorus, petroleum, and bisulphuret of carbon, and, by itself, a scruple of potassium in a glass tube; this I enclosed in a stout glass flask, and threw it with all my might into the sea; it bubbled for a minute as the water entered the flask, and then exploded, the contents being fired by the intense heat of the burning potassium. A flame covered the surface of the water for a few seconds, and flames burned under its surface also. These experiments were very dangerous, but I fortunately escaped without even a slight burn.

I tried a new model fire-ship, which was constructed as follows:—A flask, containing about an ounce of the saturated solution of phosphorus in bisulphuret of carbon, was put on board a piece of wood six inches wide by eighteen long, pointed at each end. This was ballasted with stones to keep it upright, rigged as a schooner, and launched from the Esplanade on a smooth day. In this flask I placed a piece of ignited quick-match, carefully coiled, and calculated to last ten minutes. The breeze was favourable, and my little boat was carried at a rapid rate out to sea, when, just in sight, the flask exploded, and the flame covered the surface of the sea for some feet, and must have been seen for miles. What effect would the ignition of a hundred gallons of this liquid have on board a fire-ship during a naval battle? For the solution would ignite

wet wood or canvas, which would burn with great fierceness. I formed several shells of brass, which I filled entirely with potassium amalgam. In these I put minute glass tubes containing a drop of water, and shot them with my crossbow against the rocks. The tube was instantly broken, the potassium inflamed, and the shell burst with a sharp report. On going to the spot a few minutes after I found that the metal had been fused by the intense heat of the explosion.

These various experiments deeply interested me, for I understood how easily the entire surface of the earth could enter into new combinations through the combined action of the four marine elements—oxygen, hydrogen, chlorine, and sodium, which, liberated from their present alliance, would disintegrate all substances that they touched. Such a process might resemble that described in 2 Peter iii. 10: "The heavens shall pass away with a great noise, and the elements shall melt with fervent heat, the earth also, and the works that are therein shall be burned up."

Shortly after this I became much depressed in body and mind, in consequence of a succession of sleepless nights, induced by the intensity of the emotions attendant on my various researches; for I had little means of carrying out my plans, and no friends whose experiences could be of substantial

use to me. I would sometimes work for weeks at the construction of a piece of elaborate apparatus which would be broken at the last moment; and having exhausted my resources in purchasing the materials for it, I would be obliged to relinquish my attempts for the present. This depression was succeeded by lethargy and excessive muscular prostration, which rendered me hardly able to walk; my energies had, as it were, exploded in the consumption of my feelings. The fire that glowed within me had well-nigh consumed its frail furnace, and left but a cinder; but the sparks were not yet extinguished, and were destined to feed on fuel of another character, and kindle anew the ardour of a slumbering flame.

Having no young companions, I turned for sympathy to the lower animals, thinking that in the study of their instincts I should find more solace than in the dead inorganic world. In my walks I had noticed a goldfinch, which hung in its cage outside a cottage, and was trained to draw water by means of a small thimble suspended by a chain, and to open a lid to extract its seed. It also performed a variety of other tricks, such as dancing on one foot and shouldering a stick. I entered the cottage and conversed with the owner about his goldfinch. He had reared it from the nest; it was his greatest treasure; its loving ways endeared it to his children, and he had given it the name of his first-born, who

had died. He was a poor tailor, who, having lost one eye, had some difficulty in making a living, for his trade was overdone in the town, and his family was very numerous. On my expressing a wish to have the bird, he at first declined, as he could not part with the namesake of his dear son ; but on my offering three times the usual price of these birds he consented to sell it, and said he would train another to perform the same feats. "Peter" answered to his name, but in his new home showed little of his former vivacity ; his tricks were but imperfectly performed, and his song was less frequently repeated. I soon felt that he, like me, was a prisoner, and pined for old friends. I felt some compunction at having separated it from those who had brought it up ; but gradually it became used to its new home, and I became more reconciled to my lot, for neither could escape from it. Birds probably recollect at least a portion of the circumstances of their former lives, and perhaps look back with some feelings approaching sorrow on brighter days. I at this time remembered with regret the time when I roamed with my companions ; but, like the birds, when the season of brooding is over, I was cheered by the thought of moving to another place. This wish was not gratified for many months ; but as the summer advanced I got into better spirits, and resumed my chemical researches.

CHAPTER XIX.

My Personal AtTRACTIONS increased by an Explosion of Gunpowder.
—Wanton Cruelty to a Horse.—Sparring between Mr. and
Mrs. Grundy.—The Happy Life of a Horse.

I WAS anxious to form a mortar for throwing stars, similar to those used in “Roman candles.” For this I used a long piece of lead tubing, of an inch bore. I rammed my tube with composition, and conveyed it to the Nothe, my favourite place for making experiments. I ignited it once, but it exploded without accomplishing the required end. I had a large flower-pot full of the composition, consisting of gunpowder, pounded glass, sand, and other ingredients, and this I was stirring somewhat briskly with a stick, when I suppose the glass detonated with the powder, and a slight explosion took place. This was followed by a general explosion of all the combustible material I had about me, including a small packet of gunpowder, which being on the ground, blew up in my face. The hot smoke and gas for a moment enveloped my face, and I came out looking like a blackamoor. My entire eyebrows,

eyelashes, and the hair on the edge of my forehead were burnt to a cinder, and I felt intense pain in the cuticle of my face. I had some difficulty in getting home, as I could not open my eyes, but was led part of the way, and, getting into a boat, was conveyed across the ferry. I had a great deal of fever for some hours ; but this was reduced, together with the pain, by the use of a rag spread over my face, kept wet and cool by the evaporation which was allowed freely to take place. I subsisted almost entirely on fruits for some days. The entire skin of my face and neck came off, and the new skin was smooth, and showed no visible scars. After the lapse of a month my complexion was fresher and more delicate than it had been before, and my eyebrows and eyelashes were soon darker and more luxuriant : I had thus greatly improved my personal appearance.

In walking one day through a field in the neighbourhood of Sandsfoot Castle I observed an old horse which some boys were tying up between two posts. On inquiring their object, I was told that it was to be shot for dog's meat, being "old and past work. I sat down at some little distance from these boys and waited to see what they would do next. At length a very rough-looking man came riding on a white horse. He dismounted and took from his horse's back a canvas package, which contained a cannon made of

the barrel of a blunderbuss. This, being fastened between two stones, was loaded and primed. When the boys were doing this I went up to the man and questioned him about the horse. He was very gruff, and inclined to be impertinent. The horse, he said, was thirty years old ; it was a blood horse, which



The Miserable Horse.

his father had purchased as a colt for hunting. Being a good-natured and quiet animal, he and his brothers and sisters had ridden on it from youth to middle age. At last its wind was broken, and it was put into the shafts to drag the refuse of the

stable ; but this sort of work, being unsuited to its former mode of life and shattered constitution, broke it down, so that one day, on drawing a heavy cart up a hill, it fell and was for a time unable to rise. Its emaciated condition and its broken skin attracted the notice of the bystanders, who remonstrated with the carter, who was savagely beating the poor animal about the head. A Quaker passed by who subscribed to the society for the "Prevention of Cruelty to Animals," and being filled with compassion for the poor beast, and indignation at its ill treatment, inquired the name of the owner, who turned out to be a farmer who was commonly considered respectable. At the Quaker's request the shafts were removed, and the poor beast was led home, and his master was called on and informed that his carter would be summoned. The farmer, being amenable to the influence of public opinion, was anxious to avoid exposure, and offered, if the Quaker would relinquish the intention of prosecuting, to dismiss the carter at once from his service. To this the Quaker acceded. The farmer was in a bad temper, and would have felt great pleasure in thrashing the Quaker with even a thicker stick than his carter used to the horse, but prudence prevented him. He determined, however, to wreak his vengeance on the poor animal.

While I was talking to the farmer a respectably

dressed woman came up, and, addressing him, said, "James, I hope you are not going to kill old Thomas. I see you are tying him up." "Yes," said I, "they have loaded the cannon, and one of the boys is gone for the match." "I wonder," said she, "he can have the heart to do it." "This is the horse he has ridden since he was five years old; it has carried him faithfully through many a hunting field, and often preserved his life and limbs by its steadiness and strength. I am sure I wish I had not married such a man; for when I am old and past work I fear I shall be ill-treated also. He is too great a coward to shoot me, for fear of his own neck; but I am sure to be neglected and left to die by inches, or to be kicked and knocked about like that poor brute moaning there." And the poor horse, on hearing the female voice, turned round and groaned, and, casting its fine intelligent eyes on her, they, in the language of the brute creation, which every man not inhuman understands, said, "Save my life!" It was a sad wreck indeed, the skeleton of a noble animal of the finest form and purest lineage; but its bones protruded through its skin, and numerous purple sores, as large as the palm of my hand, bore testimony to its ill usage. The farmer now turned his wrath on his wife, on whom he bestowed the grossest abuse. "Is it for this that I took you from a miserable home, where your

sisters would stoop to any meanness for a livelihood ? and where you besought me to marry you almost on your knees ? and how I did so as much in pity as in love ? ” and he poured forth another string of harsh and vile adjectives and participles. “ I know how to get the better of Grundy,” said she, laughing ; “ he shan’t sleep any this night. Two hours’ sleep in the day is enough for me, and I get that when he is out,” said Mrs. Grundy. But the surly farmer, with his large paunch and square red face, was not to be put off ; and as by this time the boy had returned with the matches, everything was ready for firing the cannon.

“ Get away, boys ; go home, woman,” said he. I walked a few steps with her out of the field ; “ I’ll serve him out, that I will ! ” said she. I ran as fast as I could, and went down to the beach, where I soon heard the report of the cannon, but not the groans of the poor horse.

I fancied how I should have treated him had he been the friend of my youth and the companion of my manhood, and in imagination pictured the happy life of a horse, and contrasted it with that of man.

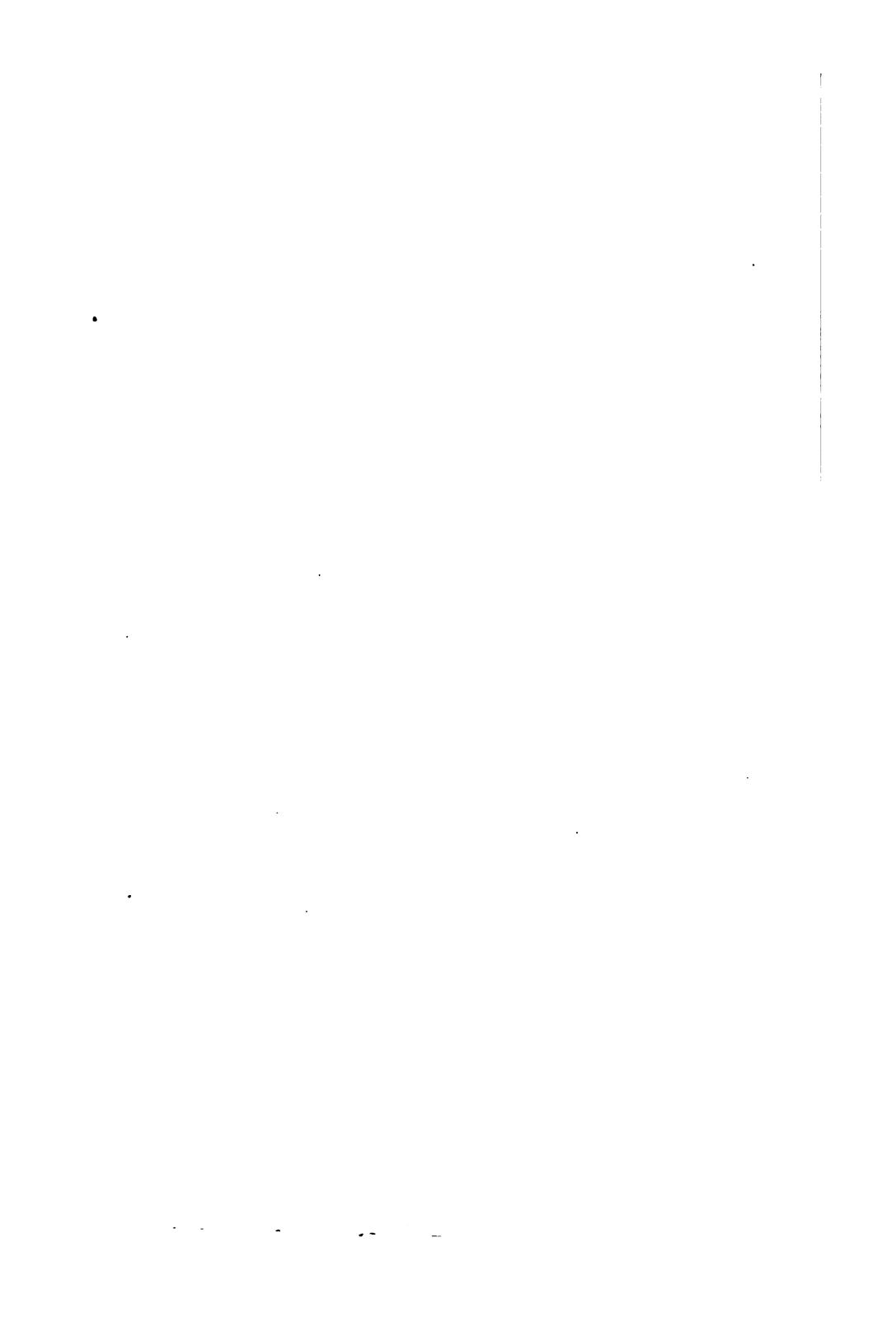
Born in a green meadow, he rests upon a turf softer than the finest Turkey carpet, which is at once his couch and his food. This meadow is crossed by a stream, which affords him drink and a refreshing bath in the sultry heat of summer ; for, until

two years old, he is free from the restraints which man imposes. Then his school-days begin, and his troubles; for there he enters on the discipline of life, fights its battles until his will is conquered, and he becomes a useful servant of the public. During his youth he is the frolicsome companion of boys, who mount his back ere he is broken in. They ride to school after he has received his lessons, and in their holidays he gallops with them to the scene of sports and pastimes. Gradually he acquires a taste for the music of the hunting-horn, which "waking him to ecstasy," he prances to meet the hounds, every muscle quivering as he neighs impatient of the curb. If any glory is gained that day, if any sport is enjoyed, it is through his exertions and endurance. The man who is not merely merciful, but *just* to his beast, cannot forget its services. He will pay its wages as a servant as well as his debt of gratitude, and something over as a reward. Can I forget thy services, my dumb companion? You conveyed me over the hills, the moors, and the sands; and through that rushing river you saved my life. You won the steeple-chase, gained for me a silver cup that made me the pride of the county, and bestowed on me many more services which my tongue is too short to tell. If I live, thy age shall be as easy as my age; and if I die, I will leave thee a mortgage on my fairest meadows—a legacy to my sons of a father's



THE HAPPY YOUTH OF A HORSE.

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gratitude ; there thou shalt dwell when thy infirmities render it necessary that thou shouldest leave the service of my house. Thou shalt die in the green



The last Happy Days of a Horse.

pastures that saw thy birth, and thy last glance shall be on me or mine, and thou shalt moulder in sight of that hill which saw thy triumph and thy master's.

CHAPTER XX.

A Flight of Herons.—Life in a Privateer.—Blowing up a French Man-of-war.—An Awkward Place for a Lady.—Thirteen Dozen of Waistcoats turned into a Gown.—The Language of the Eye needs no Interpreter.—A Pleasant Meeting.

IN the month of August the weather was fine and calm, and one day I set off in Caddy's boat on a visit to the Fleet—an arm of the sea separated from the Channel by the Portland ridge. We took the dredge with us, in hope of obtaining something. There was just sufficient breeze to drive us along the water at a gentle rate. A large flock of birds flew over our heads, with long necks, and of a great size. They were probably herons, but Caddy said they were very like flamingoes, which he had often seen in flocks during his voyage to the West Indies. "These flamingoes," said he, "are extraordinary birds; they fly with the regularity of troops, and alight and stalk through the marshes like an army; they make nests, like wine-glasses, of clay, so strong that you can almost sit on them. I have taken hundreds of them on the Bahama quays. I met with wonderful things on my voyage to the West Indies." "You were in

the Navy, Caddy, were you not?" "No, I was in a private ship; a privateer, sir. She was fitted out at the port of London, and I signed for two years. She was a splendid barque, carrying sixteen guns.

"We landed at Jamaica, where we had fine 'larks'; and I spent all my money and got into ill-health besides. We took three or four Yankee prizes, but only two of them were worth having, and we were as nearly as possible run down by a Frenchman, who broke our mizzen boom, and carried away our rudder, but, drawing less water than her, we 'hugged' the shore, and so escaped. We next fell in with a French privateer, which was somewhat longer, but much slower in her motions than our ship. She gave chase. We could have escaped her if we had liked, but all our crew were burning to fight her, for we had not yet had a fair 'stand-up fight' with an armed ship. She was most likely an old French man-of-war, for she was strongly built, and her decks were like those of a frigate. We counted twenty-one guns, and her tonnage was twice that of our barque. We laid-to for her, accordingly. Our captain was in high spirits, and our second lieutenant, who by the way was a cousin of mine, though a real gentleman, was exulting in the hope of spoiling an armed ship. She sent a raking shot across our bows as we came pretty near, and hung out her speaking signal. She proved to be the 'La Rochelle,' a privateer sail-

ing under the French flag, and demanded our surrender on hearing our name and country. We replied in the negative, and sent a shot through her rudder, which disabled her at first, and the action commenced. Her crew were evidently well trained and numerous, and served their guns well.

"We were both battering each other's sides pretty briskly, and were getting the worst of it, when our captain signalled to lower a boat for the boarders to enter. I was at the furnace, heating one or two shot, which the lieutenant was going to fire as an experiment. I had been on board several French ships, and noticed the place where they usually had their powder magazine. I thought if I could throw a 'hot shot' in there, I should most likely blow her up. I mentioned this to the second lieutenant, who said, 'By all means; do your best.' There was no one that understood 'hot shot' but myself, and I had only once or twice seen the practice at Chatham. When my balls were just red, I got the swivel gun, a '46,' had it loaded, and prepared a wad of cotton-wool and cloth in the form of a round pad, and $3\frac{1}{2}$ inches thick. This I soaked in a strong solution of alum, and dried and rammed it into the gun, cleaning it thoroughly well first from any dust of powder. The fellows were too much afraid to pop the hot ball in, so I stood before the gun and did it myself. I took a clear aim for two fathoms behind the mainmast, and

two feet under water. Whiz went my shot, fiz—fiz—fiz through the water. I looked through the port-hole and saw smoke on that side of the ship where my shot had struck. I loaded my gun again, popped in another shot, and drove it as nearly as possible in the same place. Whiz—whiz!—then a bang,—a growl,—a puff of smoke,—and, lastly, a tremendous explosion. Our captain instantly gave the word, ‘Steer away, my boys! sheer off!’ I looked through the port-hole and the Frenchman was one mass of flame; all her masts and rigging were gone, and she was spitting fire like a volcano, and casting up her timbers, and even her guns, like so many pebbles. This was sea-sickness with a vengeance. The timbers fell on the sea, and a few even on our ship, breaking our main-yard, bowsprit, and foretopsail, and wounding one man in the leg. The ship was sinking very fast, and we thought in a few minutes we should see no more of her. This our captain observed, and being a humane man, he put off in the ‘gig’ and sent my cousin and myself in the whale-boat, to try and pick up some survivors. There was a heap of spars in one place. I looked at them carefully, and saw something white, which looked like a human figure just risen out of the water. ‘There’s one man at least!’ said I. We pulled close to the spot, and taking the boat-hook, I fished among the spars and caught hold of the body

of a human being. I pulled it towards the boat, when I perceived that there were two. We threw a rope's end round them and hauled them on board. A young woman, with the remains of a shift on her, was clasped round the body by a headless man, whose death-grip held her like a vice, and who had well-nigh carried her hopelessly into the depths of the ocean. We had some difficulty in releasing her, for she was quite insensible; but my cousin, who was a bit of a doctor, put his hand on her side, and said he thought there were signs of life; but she was nearly black with powder-smoke over all the chest and ribs. We rowed to the ship, and my cousin and I set to work to attempt her restoration. We took her into the captain's cabin, laid her on the dinner-table, rubbed her well with the flesh-brush, pulled her arms backwards and forwards, and at last we perceived symptoms of breathing. She brought up about a quart of sea-water, and after this she breathed strongly. We continued to rub her, and I thought I never saw a more lovely form. My cousin said she reminded him of an old Greek Venus rising out of the sea. Her hair was so long that it came down past her waist, and her limbs were beautifully round, and her features sweetly pretty. My cousin, who thought more about good looks than I did, often stooped to kiss her lovely forehead. She at last made a sort of gasp, and gave evident signs of re-

turning consciousness. ‘Go and get one of my shirts, Caddy,’ said my cousin to me, ‘a pair of my best unbleached drawers, a white waistcoat, and a pair of cotton stockings.’ And so we dressed the poor young lady; for the delicacy of her form, and the softness of her hands and feet, convinced me that she was a person of quality. The lieutenant sent me on deck, and made her very comfortable with a mattress and cushions in his own berth. About an hour after I left her she opened her eyes, stared about her, and muttered some words in a foreign language. The lieutenant could not make her out, but thought she was speaking French.”*

The only person on board who understood more than a few words of this language was a dirty cabin-boy, who being sent for, interpreted the young lady’s speech. She was the daughter of a wealthy planter in Martinique, and was returning in her uncle’s ship from Paris, after having completed her education. She thanked her deliverers in a feeble voice, when the lieutenant expressed himself ready to do anything he could for her. She was evidently still very ill, and almost immediately became slightly hysterical; quiet was clearly the only safe course with her. The captain and one or two of the officers, however, went to see her, but intrusted her care entirely to the young lieutenant.

* From this point I have abridged the narrative.

The third day after the explosion she was able to converse freely with the cabin-boy, and expressed her great anxiety to have some female apparel, but there was none on board the ship. What was to be done? Some mosquito-curtains were first thought of ; but as the captain intended to visit the mosquito shore, he would not spare them for such a purpose ; and sail-cloth, which was the only fabric on board that was not made into garments, was deemed too stiff and rough to touch the tender skin of the young lady. The lieutenant's ingenuity, being put on the rack, did not fail him. He was carrying out, on his own account, thirteen dozen of yellow satin waistcoats, to sell to the Blacks of Trinidad, and he thought that with the fronts of some of these he could construct a tolerable gown, and with the backs a decent petticoat. Fearing he should fail and disappoint the fair lady, he said nothing about his project, but worked incessantly for a week, taking his text from a book of fashions twenty years behind the progress of the age. He took mademoiselle's measure, and, after the diligent labour of a week, at last completed a tolerably neat dress and petticoat, which had reefs in it, however, instead of tucks. He knocked at mademoiselle's door, bringing the two articles of apparel, with a clean shirt, pair of stockings, and pumps. Mademoiselle's eyes sparkled with delight ; but she smiled on seeing the tailor's name and

address repeated many times on the petticoat, which the lieutenant assured her was a new, English pattern. In half an hour the lieutenant returned, and found Mademoiselle Marie sitting on the bed, looking very neat and pretty in her yellow satin dress and numerous buttons, which the taste of the lieutenant had arranged in rows and groups of flowers, with a tremendous true lover's-knot in the centre. She rose as he entered, seized hold of his hand and kissed it. The cabin-boy was sent for, and mademoiselle expressed the most lively feelings of gratitude, shed tears abundantly, and clasped the lieutenant's hand, saying, "My life, and everything I have, I owe to you!" She had evidently a warm and generous nature in common with him, and this occasioned sympathy and love between them; for although they had few words in common, yet the face by its expression, and the hand by its touch, can convey signs—the freemasonry of a common humanity, at least among the superior races of mankind. The "language of the eye" and the grasp require no interpreter. The lieutenant being often in the cabin with mademoiselle, his visits began to excite the jealousy of the other officers, especially as on her first coming on deck, she, on the pretext of weakness, leaned on his arm.

Being now fully recovered, she dined in company with the officers of the ship, and related

many anecdotes of the career of the privateer, of which she was the sole survivor. The lieutenant was constantly studying French, and she was constantly learning English; both, having strong inducements to understand one another, made rapid progress. Her beauty, and the charms of her manner, gained her many admirers among the officers, and she was sufficient of a coquette, or had enough tact, to improve the influence which she had acquired; for the officers vied with one another in paying her attention and providing comforts for her, the captain especially, who made her a proposal of marriage. She thanked him, and said that his kindness and that of the other officers of the ship overpowered her, but she did not give him a direct acceptance. The jealousies among the officers were so great that, in order to maintain peace the following arrangement was made:—The captain should take her down to dinner every other day, as chief officer; that lots should be drawn for the other days; that she should dance one dance with each of the six officers of the ship, when so inclined; that none of them should attempt to kiss her in public. These rules appeared necessary, to prevent mutiny; but being somewhat infringed by the lieutenant before-mentioned, the captain put him in irons, which made poor Mademoiselle Marie very unhappy.

One dark night, as they were close to the shore of

Cuba, a splash was heard on the lee side of the ship, and the noise of an oar; but the gloom was so great that the man on the watch saw nothing. As the dawn broke it was discovered that the punt was gone, and with it the young lieutenant and Marie.

About a dozen years after this, when Caddy visited in a peaceful trader the sunny shores of France, he was accosted, on entering the market-place of Havre, by an elegantly dressed gentleman, who, in pure English, called him by his name. This was the lieutenant, Caddy's cousin. He was invited to a fine villa on the outskirts of the town, and was introduced to a lady, in whom he traced a resemblance to Mademoiselle Marie. On hearing who he was, she shed tears, and seizing his rough hand she clasped it with all the tenderness and warmth of an affectionate but passionate Frenchwoman. She was surrounded by seven children, whom she presented to Caddy as to one of her best friends. On hearing his position she said, "My husband must do something for you, for we are in good circumstances." So they bought him that tub of a boat in which I then was.

Caddy was so much occupied telling me the story that he did not notice that the boat had run aground on the muddy banks of "the Fleet," and so we had to stay a whole hour until the tide had turned and we were free.

We cast down the dredge several times, and got some interesting fossils, and a bronze spur of mediæval date, which was unfortunately lost before it could be carefully examined. We also found a small brass coin, which I likewise lost. It was probably a "jetton" from Abbotsbury.

CHAPTER XXI.

Studies of Human Character.—Pronounced Shelved.—Unhappy at Home.—Dr. Bumptious.—Vegetarianism.—A Nose like a Button Mushroom.—How to Scold away Custom.—Fifty Pounds for a Vote.—Mrs. Rattlepan.

WE had a few acquaintances in the town, some of whom were pleasing by their amiability and affability, while others were, in their peculiarities, interesting to the student of character. Physiognomical sensation, which is more or less common to mankind, and especially to children, was remarkably lively in me, and from my earliest years I have been in the habit of resigning myself to its direction. The tone of voice, the expression of countenance and gestures, were especially noticed, and were treasured by me as the precious statistics of the man, which, by a process of moral arithmetic, enabled me to take his measure. But this was for a long time done indefinitely. I was not sufficiently versed in the language of physiognomy to explain my thoughts to others with precision. A very slight conversation with a person was sufficient for me to ascertain his disposition; and after the first

or second interview, I was convinced of his suitability, or otherwise, as an acquaintance. Thus I did not require long contact to observe points either of attraction or repulsion.

Our family was acquainted with a gentleman who had retired from the army and devoted himself a good deal to missionary work, and as he was settled at Weymouth we renewed our intercourse on visiting the place. He was a very amiable and genial sort of man, but credulous and superficial in his views. He had a very considerable amount of talent, but common sense was greatly wanting. He was an inveterate "button holder" and moral lecturer, and endeavoured to turn everything to account. A cart could not lose one of its wheels, a boat could not be upset, whether empty or not, a colliery explosion could not happen in the north, without forming capital for this ingenious man.

Some people liked him immensely, and were inclined (ladies of course) to kiss the sod he had trodden down, and to carry it home as a precious relic. He was a married man, with a large family, who were greatly supported on the voluntary contributions of his admirers. He was a much greater favourite with ladies than with gentlemen, who generally used his name with a tender prefix, and they even pitied him in having a wife of little energy. She was a meek, docile creature, who felt

for her husband a sort of blind idolatry; but her placid disposition and unexcitable temper rendered her little inclined to bring herself forward in any way. She was equally inactive in the superintendence of household duties, but spent most of her time in needle-work; her conversation was heavy and uninteresting. One of the ladies who most admired her husband paid us one or two visits, and stretched the English language in order to find words to convey her admiration for the worthy man. She was a "ruling elder" of the Bostonian school, and an authoritative, dictatorial woman, with a good deal of shrewdness and some talents for governing. She acquired great influence over the husband, and endeavoured to rule the house, so far as it could be done from a distance. I had heard a great deal of this lady—Miss Polly, who was a spinster of thirty-nine. She came into the room limping with a corn, and endeavouring to hide her clear complexion under a poke bonnet. She took rather a fancy to me, and I did not dislike her, though she read me a short lecture. She was disposed to be sympathising, and her intellectuality and power of mind rendered her interesting. She was exceedingly domineering to her own sex, but much more kind and conciliatory to the other. She had some taste for beauty in natural objects, and could appreciate an inquiring mind, unlike her hero

who saw in the works of God only what was “made to be taken and destroyed.” My young heart rebelled against the doctrine, for I was disposed to find the greatest delight in the works of God—

“The meanest flow’ret of the vale,
The simplest note that swells the gale,
The common sun, the earth, the skies,
To me were opening paradise.”

This respected female did not live in Weymouth. She said she wished she did. She had long been pronounced shelved, but two years after we saw her she met an interesting clerk who was induced to marry her, to the chagrin of younger and fairer competitors. In reward for his preference, she presented him with six children, who were perhaps more than he desired, considering her age and his small income.

One of our pleasantest acquaintances was another young-old lady, the eldest of a large family, who making herself unhappy at home, found her greatest enjoyment abroad. She appeared to me one of the sweetest persons I ever met. She was kind and friendly, and was little ceremonious. She had a great admiration for the patriarchs, but the quality she had most in common with any of them was Joseph’s—that of bringing an evil report of her brothers and sisters. But she did this in such a sweet and artless way that she led us to believe that

she was a martyr, a melancholy instance of blighted affection. She was addicted to reading, and was intelligent and conversable, but her mind was not happily constituted. She could not take a fair view of things, being somewhat fanatical ; this we learned rather than experienced, for she was always extremely affable to us, and appeared to have a tender and somewhat sentimental mind. She was one of the hero's most ardent admirers, and left a comfortable home and affectionate parents to follow the fortunes of his family.

Being in delicate health during my sojourn at Weymouth, my friends had recourse to medical advice, and accordingly placed me under the care of Dr. Bumptious, a big-headed man, who was certainly clever, but very eccentric. He had a firm belief in the "fallacies of the faculty," and the meanest opinion of his profession. His greatest delight was to ridicule the conduct of doctors, especially on the occasion of a consultation, which he believed to be generally a farce. He did not consider himself bound by any of the three "pathies," but, living by the seaside, he was most addicted to water. He appeared to have a more profound knowledge of the human frame than most of the other "medicos" that had been consulted, and was more honest, straightforward, and acute. He studied and read a good deal, and appeared to be master of the popular

science of the day. When consulted on my case, he shook his head, and said, "Over-excitement of the brain, induced by excessive mental activity, leading to exhaustion of the nerves and paralysis of the muscles." My food was commonly said to do me no good, for I had little appetite, and still less power of assimilation, although the neighbourhood was ransacked for delicacies, especially from the animal kingdom. He advised me to turn to vegetables, as being less stimulating and exciting. This I had some repugnance to do, as, Weymouth affording few plants, I took less interest than formerly in botany. Vegetarianism at this time began to attract a considerable amount of attention, and several of our acquaintances joined the association, and were anxious to make proselytes. The more active disciple of Ceres and Pomona was a Mrs. Bosh, who reigned, with her three daughters, over a small house and garden on the outskirts of the town. The only comestibles admitted into her house beside vegetable productions were eggs, milk and its products; these appeared to her to afford all that was required for the support of man, without the necessity for destroying life. The hero and his family were of the same opinion, and often urged the advisability of adopting a vegetarian diet. They said they were much better in health than when addicted to a mixed diet, which I for

some time doubted. My health appeared to be so bad, that I was at last induced to make the experiment: I felt a little inconvenience at first, from the somewhat insipid flavour of the food. I was abundantly nourished, but the palate was not sufficiently tickled. This, however, only lasted about a month, after which I thoroughly enjoyed and relished the diet: was it not that of worms and caterpillars, which I had formerly so much studied? At length I had a positive distaste to the flesh of animals, which was disgusting to me both in taste and smell.

This continued for upwards of four years, during which time our whole family had no butcher's bills. My sight was more clear, my memory stronger, my scent and taste wonderfully acute, and my muscular strength greater. I assimilated my food much more perfectly, and suffered much less from headaches, which had formerly been well-nigh constant. I studied the chemistry and physiology of the matter, and became convinced of the advantage which would accrue to the majority of Europeans by the adoption of the diet: it is the food of the greater part of mankind. I made calculations as to the quantity of aliment produced by a farm of 100 acres of land, and how it would support a much larger population fed on vegetables than on the flesh of animals. Reasoning from this, I argued the advantage to man, morally and intel-

lectually, of its adoption, as by increased economy in his diet he might spend his resources more largely on the culture of his moral and intellectual faculties, and in storing a provision for sickness or old age; for then the harvest is suspended or over, but the seed may be kept alive for a long time. As the old-fashioned cookery books afforded few dishes suited to our new style of living, we turned our attention to that sometimes *fine*, but always useful, culinary art; and with Liebig in one hand, and chemical apparatus in the other, endeavoured to study the chemistry of food and cookery, and I was led to invent several dishes, some of which were really good. There was an old lady who had no sympathy with our vegetarian notions. She had been a Quakeress, but feeling the discipline of the sect too strict, she withdrew. She was a notable housewife, and almost her whole conversation was about eating and drinking. She enjoyed heartily the products of all kingdoms. She was very fond of oysters, to the shells of which her ears had a great resemblance, while her little nose might have been compared to a button mushroom.

When we first went to Weymouth, I visited all the libraries, inquiring for books of science. I did not meet with any. "We are never asked for them," was the invariable answer. I next visited the second-hand book shops, but was asked high

prices for books. An old woman kept one of the latter, which she united with a fancy shop; she had several books of great interest to me on natural history and science. For some of these being handsomely bound, she demanded an enormous price. On asking for books on zoology, she said the only one she thought she had was Buffoon's (Buffon's) Natural History. There was one work on chemistry that I much coveted, but she asked for it the enormous price of £13. I made frequent visits to the shop to purchase trifles, and always opening this book, I gained much information. She had very peculiar notions as to the honour and responsibility of shopkeeping. She considered herself a servant of the public, and that its patronage was her due. She would scold her customers for not purchasing her goods, and considered her want of success in trade a proof of the degeneracy of the age. Her want of tact and knowledge of the Weymouth market had its natural results; for she would sometimes pass a week without selling ten shillings' worth. She had little idea of what was due to herself and others, often taking the most inexcusable liberties with persons above her in station, which still further excited disgust: added to which, she was very untruthful.

The morality of the Weymouth tradesmen as a whole was not very high, for on the occasion of

elections, either municipal or parliamentary, bribery was common. One man made himself especially notorious. He was poor, with a large family, and on the occasion of a party division found himself in great request. He might have sat for his portrait in Hogarth's celebrated picture of an independent elector, for he slyly received money from both parties. The Weymouth man did not, however, vote at all; and, upon being asked to return a bribe of £50, said he could not, having paid his debts with it. The municipal elections were not less impurely conducted, only the money spent was smaller in amount. Once I saw a son of the late mayor deliberately break some windows. He was noticed by a policeman, who would have taken him into custody, when he was warned not to do it by the young man, as it would be injurious to him. On mentioning this in several quarters, I was told that the magistrates "could do no wrong."

The daughter of an old friend had married a Scotchman of good position and old family. She was an exceedingly lively person, but her husband was very much the reverse; we will term her Mrs. Rattlepan. She was very good-natured and affable, a little inclined to flirtation, which is often a gift in male society. She had a companion, a Miss Gipsy, who endeavoured to draw out, by the finer fibres of woman's heart, almost every man

she met. She had travelled over most parts of the Continent, and was thought to have left her heart at almost every Spa. The first impression she made on many men was, what a charming, warm-hearted creature she is ; open as a cloudless sky, and with none of the arts which so often twinkle from under scowling eyebrows. When I first saw her I was pleased with her, but thought her very deep, and one who knew well the value of money. She was a good housekeeper, and had many excellent qualities, for she did not neglect her household duties even to talk to a handsome man. She was much laughed at for an affair with a Count Bobluco, to whom she actually engaged herself ; but it soon turned out that both the parties to this engagement were fortune-hunters. The young lady wanted a good settlement as well as the gentleman, and as neither were likely to get their wish, the engagement was wisely broken off.

CHAPTER XXII.

A Great Opening for a Naturalist at Poole.—Rare and Fine Insects.—A Dashing Colonel.—Making Birdlime.—The Turk.—The Countess.

THE neighbourhood of Poole presenting many points of interest to the naturalist, we were induced to visit it in the ensuing summer. I found the shores of the bay prolific in several plants of great interest, such as the Glasswort (*Salicornia radicans*), the Procumbent Azalea (*Azalea procumbens*), and the three species of Sundew (*Drosera rotundifolia*, *longifolia*, and *anglica*), on the leaves of which we saw numerous insects entrapped, sticking to the hairs, from which exudes a viscid secretion. I carefully collected with a pin about a grain of this viscid secretion in a homœopathic bottle, and used it for some experiments. I found it vesicated the skin when applied even in the most minute proportion, and when the eyes of insects were touched with it they were more affected than by the most corrosive mineral poisons. I found a good many of the plants here that I had formerly noticed at Budleigh Salterton. I obtained

a spider of large size (*Dolomedes mirabilis*), which I caught as it was creeping over a web of great thickness. This web was far thicker than any I ever have handled. The animal was of a very dark brown colour, was clothed with thick and strong hair, and had a broad white line on each side of the body. I here noticed the manner in which some large species of dragon-flies lay their eggs. The female of *Aeshna grandis* chooses a brook where the water is shallow, having a sandy bottom, and dabs her abdomen repeatedly into the sand, hovering over the water, and carefully avoiding wetting her wings. I noticed many plants of some interest, such as the *Cotyledon umbilicus*, of gigantic size, the Orpine (*Sedum telephium*), and a great number of sedges and grasses.

I now began to take a great interest in entomology. I had brought a few insects from Weymouth, but the number of beautiful species I met with here induced me to collect with more diligence. We were lodging at Parkstone, which is a pretty neighbourhood, and it was on a hill near this that I found the greatest entomological prize I ever obtained. I noticed swarms of a very dark blue butterfly; of these I captured many, set a few, but merely pinned the greater part of my specimens. I suppose I caught at least two hundred, and of these I kept about sixty, which were in first-rate condition. It was not until some years after I learnt that they

were the rare Mazarine Blue (*Polyommatus acis*). On a moor, about a mile and half from Poole, I took a good many fine specimens of the large blue butterfly (*P. arion*); these I at once made out and considered a great prize. I found a number of empty cocoons amongst the heather, which I afterwards discovered to be those of the Emperor moth (*Saturnia pavonia minor*). I found the caterpillar also, and was struck by its great beauty. It is studded with singular warts, of a white colour, which are ornamented with black hairs. Having found a number of the cocoons of the moth, I was anxious to turn them to account. I soaked them in spirit, and next in water for some hours, and then unwound the silk, which was of a sort of dark roan colour. With considerable care I twisted and plaited the silk finely. I found it made a stiff and very strong cord, suitable for fishing-lines, to which the silk of the larger species of Southern Europe (*Saturnia piri*) is sometimes applied.

In walking through one of the green lanes leading to Poole Bay we found a caterpillar of a dark yellow colour, variously banded and spotted. This we fed on the willow herb until it changed to a dull mouse-coloured hue, when it soon entered the pupa state. It was so like Hübner's figure of the larva of *Deilephila celerio* that I have no hesitation in assigning it to that species. This is one of the

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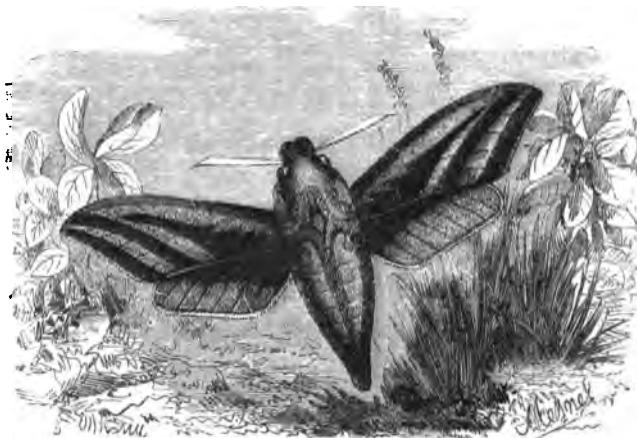


LARGE TORTOISESHELL BUTTERFLY (*Vanessa polychloros*).



PEACOCK BUTTERFLY (*Vanessa Io*), found near Poole.

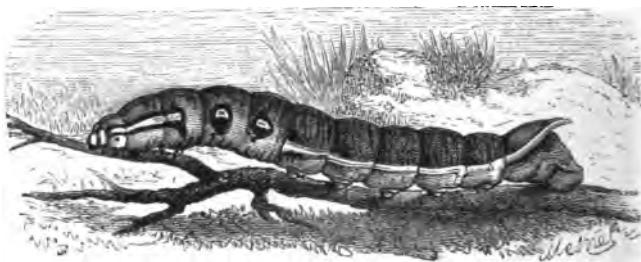
rarest British species known, especially in the larva state. I obtained a vast number of specimens of the Peacock butterfly (*Vanessa Io*): here it perfectly swarmed. The Drinker moth (*Odonestis potatoria*) was also very abundant. I several times took two dozen of the females during the course of an evening. We examined the hedges carefully in our



Large Elephant Hawk moth (*Deilephila elpenor*), found at Poole.

walks, and found large numbers of insects, especially amongst flies and beetles. We saw what we at first thought was a withered leaf in a hedge; it moved slightly, and we found it was an insect—the largest female of the Elephant moth (*Deilephila elpenor*) I ever obtained. It was the most lovely insect I had

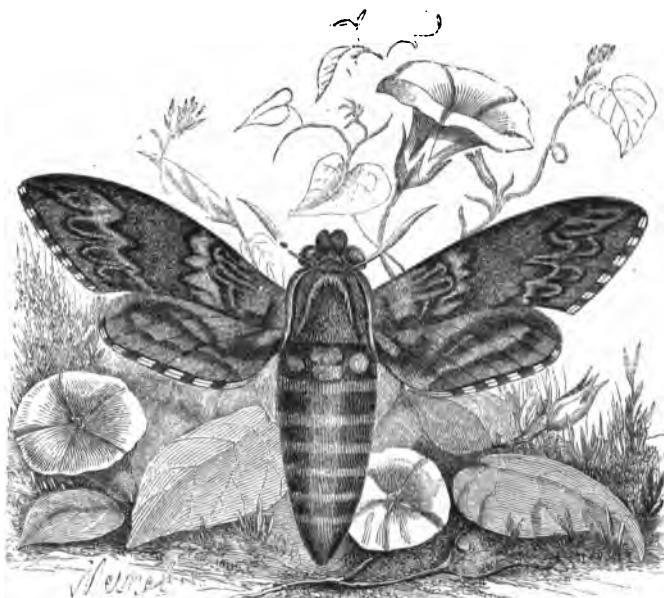
yet seen. The fore wings were green, striped with pink, the hinder black, with a broad band of pink, edged by a fine line of white. I made my desire to collect insects known amongst the children of the village, and soon had a moth brought to me which was by far the largest I had yet got, being four inches in expanse of wings. It had long, thick antennæ,



Caterpillar of the large Elephant Hawk moth.

and large and brilliant eyes, which shone like sparks in the dark. It escaped from me in the room, and I had some difficulty in catching it; for it flew with immense velocity, making at the same time a slight humming noise. The greatest peculiarity was its trunk, which, when stretched out, was an inch and a half long: it was divided into two branches. This large and curious insect had been caught by a cat, which the children I before mentioned observing, took from the animal and brought to me. Its wings were marked with various shades of grey, but its body

was marked with pink, grey, and stone colour, in the form of a chequered pattern. On comparing it with my volume of the Naturalist's Library on British Moths, I made it out to be the Convolvulus Hawk moth (*Sphinx convolvuli*), which is a widely dis-



Convolvulus Hawk moth (*Sphinx convolvuli*).

tributed, but not usually abundant, species. As we walked through the lanes at dusk we noticed immense numbers of a little white moth with a brown tail; and connected their abundance with the

riddled condition of the leaves of some young oaks in the vicinity. The ravages of the caterpillar of this insect (*Porthesia auriflua*) have been famous in history. These moths were very pretty, and as they alighted they looked like flakes of snow.

A negro, butler to one of the most respected inhabitants of the place, brought me a number of pupæ and cocoons, which he had found in the neighbourhood. This man had a little collection of insects himself, and was the only negro I ever heard of who had any taste for collecting. He had married a very good-looking young Englishwoman, and had a crowd of mulatto children.

Being in a somewhat rustic neighbourhood, there was some difficulty in getting conveyances for excursions, and visitors like ourselves were obliged to put up with what we could get. I considered myself fortunate to be able to hire a vehicle—a cross between a gig and a phaeton—which we could drive ourselves. This took us to a sandy peninsula which divides Bournemouth from Poole Bay, from the extremity of which a near view is obtained of Branksea Island, over which the notorious Colonel —— then reigned triumphant. His entertainments were on the grandest scale, and the nobility and gentry freely accepted his invitations, and the professional class considered themselves highly honoured by a solitary and brief notice. Colonel ——

was felt, for the time, to be the only man capable of developing the resources of Dorsetshire. A few years after, this county idol, who had sat on the highest pinnacles of Branksea Castle, was brought down to that mire out of which he hoped to extract so much wealth. This sandy peninsula was to me very interesting ; it contained the whitest and purest sand I had ever seen, and appeared as if it had been sifted with the utmost care, and was ready for glass-making or ballast. I never saw any that was better fitted for the hour-glass. Stretched upon the sand, but in a putrid condition, I discovered a fine male Purple Heron (*Ardea purpura*), of which I cut off the head and feet. I noticed immense numbers of wasps of burrowing-sand species ; they literally swarmed about some of the hillocks. I saw several catch spiders and flies and carry them into their holes. One, after depositing a daddy long-legs there, sealed up the entrance, having doubtless laid its eggs in the body of the insect.

We next drove on to Bournemouth, whose reputation for beauty and pleasant situation has not been exaggerated. It lies in a basin, where the soil is dry and the aspect southerly. We noticed a great number of lizards (*Lacerta vivipara* and *L. agilis*), and caught a glimpse of a common snake. Bournemouth has since acquired a considerable reputation for reptiles ; the *Coronella laevis*, the new British

snake, has been found there. I obtained several plants of considerable interest, among them the Sea heath (*Frankenia laevis*). There were a number of holly bushes cut down in the garden of the house where we lodged, and as the wood was going to be reserved for winter use, I was allowed to take off the bark, which is very viscid. I soaked it in water until the outer part came off. I boiled the inner bark, then put it into a stone jar, and kept it moist until it effervesced. In the course of about a month I pounded it in a mortar, and mixed it with a little goose-grease. I spread it upon a line stretched between clothes-posts, and, without any bait, caught two house-sparrows and a wren, which were, however, dead before I found them.

I gave considerable attention at that time to distillation, preparing a variety of ethers and essential oils, as those of rosemary, cabbage rose, lavender, myrtle, and bay. I combined many of these ingredients and formed a very rich perfume. I distilled most of the herbs with spirit about 50° over proof. What first arose in vapour was always the best; and I observed that when I attempted to distil the remainder of the liquid in my retort, the perfume was injured by it, probably on account of the increased temperature required for boiling the dregs. I also noticed it was very advantageous to boil the contents of the retort at a slow rate. All this I found

by practical experience, having no book or advice on the subject.

In my walks in the lanes I frequently met a man in an Oriental costume. He was accompanied by a ferocious mastiff, which was the terror of the boys of the village. He was the servant of a Turk, who resided for some months in the neighbourhood. This man came as a bachelor, and took a furnished villa in a secluded spot, and devoted himself to wife-hunting. Shortly before we left the place he departed, carrying with him a brace of brides, with whom he intended to contract alliance after the Mahommedan fashion. The first was an attractive milliner's girl, and the second a good *plain* cook. The house was in such a state of dirt when they left, that a large proportion of the water of Poole Bay would have been required for its complete purgation. Another singular being, who went by the name of the "Countess," inhabited a small cottage in the neighbourhood. She was of Spanish descent, but had married a French nobleman. She lived alone, with a companion and one servant. Her husband, who was a man of pleasure, lived in London at his club. The poor lady must have been very unhappy. She received no visitors, but would be seen every morning taking her walk. I several times noticed her cry and wring her hands, and thought at first she was under the influence of Spanish wine, but, on inquiry, I was told that

she did this when she remembered the happy days of her youth. She had a tall, stately figure, and wore a yellow print dress and black shawl, and always carried a large fan. Her date was *circa* fifty.

CHAPTER XXIII.

Devastating Caterpillars.—Rat-fed v. Man-fed Pork.—Making Réaumur's Porcelain.—A Fine Red Colour from Lilies.—Dyeing Wood.—The Naturalist at Lewes.—Land and Freshwater Shells.—Organic Analysis.—The Juvenile Toxicologist.

THE garden of the house where we lodged was large, and combined thousands of cabbage-plants. These were very much destroyed by caterpillars of the moth called "the Cabbage" (*Mamestra brassicae*.) Three-fourths of the plants were affected, and as a vast number were honeycombed and rendered useless, the proprietor was sadly vexed. He had killed down, he said, all the birds he could, for the benefit of his garden, and now those vile "pillars" were worse than them. But the man never thought of associating the destruction of the birds with the multiplication of the caterpillars. I collected with him, a half-gallon measure full of larvæ, of an inch long, in the course of two hours. These he gave, all alive, to the pigs. There was one favourite pig which was regaled with a great variety of delicacies. The sewers abounded in rats, which

were largely caught in them and in a neighbouring malt-house. These were drowned and laid out in a refuse heap, so that piggy could generally get one for his breakfast, and sometimes two for supper : bones, skin, tail, and all disappeared. On one occasion a living rat was thrown to it, and on another a half-grown cat, rescued from a pond. The whole of puss was turned into pork, and helped to gain the owner a prize-medal at an agricultural show.

Pigs sometimes direct their attention to even higher game. Those which fatten on the banks of the Ganges and revel on the stranded corpses of devotees, made into *genuine English hams*, were supposed to have been one means of conveying that nightmare of modern medicine, the cholera, to the West. This *prime pork* was brought to the Mauritius for the benefit of the credulous, and, eventually, to London and Cork, as "returned stock." The fondness of the pig for human flesh, was doubtless one reason why it was prohibited to the Jews; another being its unwholesomeness in a dry and scorching climate such as Palestine's during a great part of the year. Instances of pigs devouring men alive are not unknown in England.

The village was badly supplied with impure water ; but about half a mile from it, a small stream sprung from a hole in the moor. This we visited daily in order to obtain a pleasant and refreshing

draught. It is now the site of water-works which supply the neighbourhood.

There were a number of brick-fields in the vicinity, and, as usual, pools formed, by the rain filling the holes occasioned by the extraction of the brick-maker's earth. In the pools I obtained a number of *ephemeræ* and caddis-worms, and was interested to observe their transformations. I had heard of *Reaumur's porcelain*, or devitrified glass, and longed to make some. I spoke to the manager of one of the kilns, and obtained his permission to place several bottles in a part of the kiln where they would be unlikely to be removed for some months, and yet would be exposed to a dull red heat. I allowed various bottles and vessels to remain there for some weeks. On removing these, I found that a black wine-bottle had become of a porcellaneous texture, and a great deal lighter in colour. Two clear phials had become of an opaque milk-white colour, and also a small glass retort. These were as hard as porcelain, and served for many chemical purposes ; for the latter being thin, would stand intense heat without fusion or cracking. The retort, in particular, I found useful for the distillation of quicksilver. I had formerly attempted to make a glass steam-engine, but when I had nearly succeeded, my apparatus was let fall and broke. I now renewed the attempt, and, after some failures, was successful. My boiler was

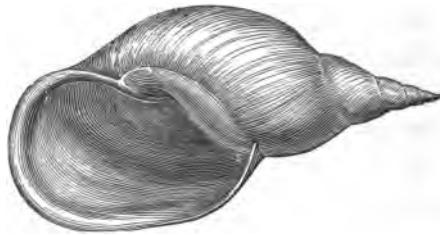
formed of a stout test-tube, and the piston of a solid tube with cross-bar attached to a wheel. A cork was fastened to the end of the piston and well greased; it was next inserted in the tube. I placed a little water in the tube, which, with the whole apparatus, was fixed in a wooden frame, and applying a spirit-lamp to its base, the alternate expansion and contraction during ebullition caused my piston to rise and fall, which motion it communicated to the crank, and so my wheel revolved; but this toy did not last for more than the second or third trial — the test-tube or boiler burst, fortunately not within reach of my eyes.

In the garden of the house I noticed a large number of lilies of a purple-red colour, having stamens of a dark-rose hue. In former years I had collected the stamens of the saffron crocus, and I now thought that some dye might be extracted from these. I accordingly collected an ounce of the stamens, which, when dry, afforded about a drachm. With this I made an ounce of tincture of a splendid ruby colour. To this I added a small portion of hydrate of alumina, which attracted to itself the colour of the solution. I poured off the water and added to my coloured precipitate a few drops of acetic acid, which dissolved out the alumina and left me a very few grains of a pasty substance, which, being carefully washed, was afterwards dried on a

water-bath. It afforded a magnificent tint for painting such flowers as dark roses and peonies. This was not my first essay in colour-making, for I had previously ground upwards of twenty colours, both with oil and water, some of which were tried by our friends, amateur and professional, and thought very good. Honey was, after the pigment, the staple ingredient in the water-colours, which were not allowed to get dry, but were kept in a moist state in bottles and pots. I paid particular attention to chemical combination in the mixtures of colours. I formed a magnificent gold-bronze varnish by mixing ioduret of lead and various gums together, which was applicable to adorning wood and paste-board. One of my young friends in former years, having a taste for inlaying and wood-carving, had great difficulty in getting wood of brilliant colours for forming his rude mosaic. I got some holly and other suitable wood, which I first coated with a solution of perchloride of iron, and then with one of ferrocyanide of potassium, and the wood was dyed of a fine blue colour. Bright yellow I got by first soaking the wood in iodide of potassium, and then in a solution of acetate of lead; and green, by the use of nitrate of copper and arseniate of potash; red, by iodide of potassium and bichloride of mercury; purple, by perchloride of gold and protochloride of tin; and black, by tincture of galls and perchloride

of iron. I had previously been told about this, but could not have believed that these processes would yield such good results. The wood was boiled in the solutions.

In the month of September we settled in the town of Lewes, which is one of the most interesting of neighbourhoods to the naturalist. It was somewhat late in the season for collecting plants and insects—at least, in the superficial way in which I had been accustomed; for I was not then familiar with the winter haunts of insects, and did not take sufficient interest in the *Cryptogamia* to study or collect them with any spirit: they are pre-eminently the winter plants. Lewes is situated on ground of varying



Limnæus stagnalis (found at Lewes).

altitude; part of the town is very high, and part equally low. The meadows on both sides of the town abound in ditches, which afford great varieties of curious objects. In winter there were few flower-

ing plants of interest to be found, but I noticed a good many fresh-water shells, such as *Limnaea stagnalis*, *L. palustris*, *L. pereger*, *Planorbis corneus*, *P. marginatus*, *P. vortex*, and *Cyclas cornea*. Numerous empty cases of the caddis-worm, also, which had attracted to themselves a covering of dead shells consisting of *Limnaea*, *Planorbis*, and other species,



Planorbis corneus (found at Lewes).

together with a few fragments of sticks. During the life of the animal, nothing appears but its head and tail; it thus escapes many attacks from fishes and the larvae of water-beetles (*Dytiscus*), as it drags its soft and fleshy body along the bottom of its native pool. In the following spring, when I found the animals living in their cases, I noticed how some species appeared to prefer stone and shells, and others, sticks, straws, and vegetable substances.

During the winter I paid increased attention to land and fresh-water shells, and collected upwards of fifty species, including two which had been hitherto considered unknown in the district. The names of

these I got from Gray's edition of "Turton's Land and Fresh-water Shells," which appeared to me a delightful book, from its completeness, having minute descriptions in addition to good figures. I visited the various woods in search of mosses, which I gathered, but did not then attempt to study them botanically. I noticed a dry arch under a railway-bridge: this had a door which was usually kept locked-up, to exclude the "tramps," who had a habit of sleeping there. I managed to get in, and to my surprise discovered an enormous fungus of an oval shape, $4\frac{1}{2}$ feet long, by 3 feet wide, and 1 foot thick. The base was black, the top dirty olive, and the stalk was 14 inches in diameter. I sat down on the fungus as I would have done on a table, like the German philosopher who was said to raise his foundation on a toadstool. It did not at first break, but, on my shaking it, cracked, and emitted a fearful odour. With a knife I made great gashes in this giant, and was busy dissecting it, when I was interrupted by an intelligent-looking navvy, of whom I made inquiries concerning this vegetable wonder. He said he had known it for the last seven years, but it at first had not been larger than the crown of his hat. I wish much that I had been able to ascertain the species.

I began to make careful records of the temperature, but had not a good standard instrument to

compare with ; however, I had then great confidence in the London maker of mine. This winter I devoted myself almost entirely to chemistry. I began analysing a number of roots, seeds, leaves, and minerals. I extracted veratrine from the white hellebore root by a long and expensive process, which made me sneeze, and caused my throat to swell by the fumes. I extracted the bitter principle from gentian root and the oily alkaloid (*Nicotine*) from tobacco, and tried its effects repeatedly on insects and reptiles, which withered and almost instantly expired on the administration to them of the fraction of a drop. I distilled coal-tar, and obtained a variety of oils from it ; what remained in the retort was asphaltum, with which I made a varnish excellent for preserving iron from rust. By the "destructive distillation" of wood I obtained illuminating gas (light carburetted hydrogen) and pyroligneous acid, as well as very good charcoal. I accidentally received a present of a bag of seeds and roots from Africa and China. A few of these, possessing a peculiar smell and taste, I was induced to attempt their analysis. I pounded some large beans, having a very bitter and acrid flavour, and treated them in the way I was directed to do when extracting strychnine from *Nux vomica*. After some failures I succeeded in obtaining about three grains of a white powder. It was intensely acrid and bitter, but on taking some to a

chemist in the town he agreed with me that it was not strychnine. I got him to take two grains of it, and try some experiments upon dogs and cats.

There was an old water-spaniel which had been in vain dosed with arsenic and corrosive sublimate for mange and other complaints, and was condemned to be drowned; but when he heard that I had got a new poison, he said, "Oh! let's try it on poor Toby." The poor dog accordingly had a grain, but bore it with great *nonchalance* for some hours. It had no irritating effect on its secretions, and we thought, at first, that it would entirely escape, when all of a sudden it gave a slight kick, turned over on its side, and expired. I felt some pain in trying experiments on animals, but my desire to witness their operation at length overcame my feelings in this respect. The other grain was divided into ten doses, two of which being administered to sparrows, killed them in convulsions in a few minutes; the other eight doses were sent away to the chemist's brother, a physician on the Continent, for similar experiments, but I never heard the result. About this time I acquired Graham's "Elements of Chemistry," which gave me much information. Being anxious to analyse some beans, so as to ascertain the amount of nitrogen they contained, I made a tube-furnace of a frying-pan, through which I placed my "reduction tube." I weighed a certain portion of beans, which were care-

fully dried and ground. I first burnt them with reduced copper, which had been carefully weighed, but not allowed actually to touch the beans. When reduced to charcoal I weighed the copper which had been oxidised, and calculated the amount of oxygen which had been absorbed. The hydrogen I next ascertained by passing carefully dried oxygen through the organic analysis tube containing beans heated to redness; in the same manner I obtained water, which being weighed, afforded a criterion of the amount of hydrogen contained; the proportion of hydrogen in this fluid being shown. The carbonic acid produced during the processes was absorbed by a solution of potash of given quantity, which being afterwards weighed, afforded an idea of the amount of carbon when the charcoal left in the tube was also weighed. I had no proper scales for ascertaining fractions of a grain, so had to carry my apparatus too and fro to a chemist's where I obtained my chemicals, who was fortunate enough to have an assay balance which he did not use. I found this such a trouble that at length I relinquished operations of the kind, and confined myself to experiments with acids and alkalis—to roughly ascertaining the contents of minerals, and to extracting vegetable bases.

A man in Vienna had been poisoned by arsenic, and a piece of his stomach had been sent to this

chemist by a medical correspondent. He handed it over to me to see what I could make of it. I tried Marsh's test, and got a mirror of metallic arsenic a quarter of an inch in diameter. I boiled part of the tissue in a test tube containing a solution of caustic potash, and added a solution of sulphide of ammonium. I got a yellow precipitate of persulphide of arsenic; added a solution of sulphate of copper to another portion, and got a green precipitate. I dropped a solution of chloride of lime on the arsenical mirror; it dissolved, which is considered a sure means of distinguishing reduced antimony from reduced arsenic, for the former is not affected by the chloride of lime.

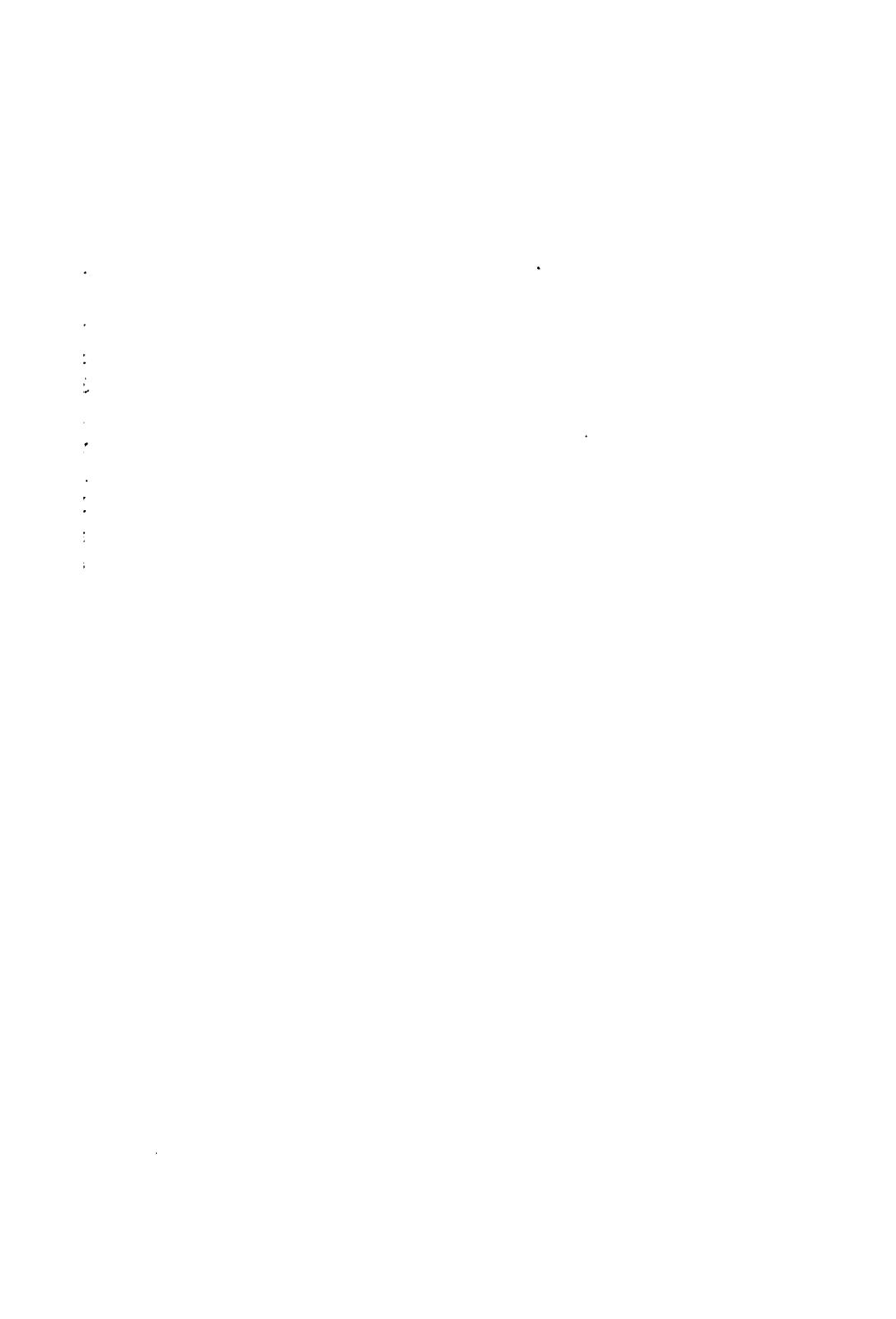
CHAPTER XXIV.

Injuring my Voice with Bromine.—Interesting Ditches.—Botany and Entomology of Lewes.—Starch from the Arum.—Mothing.—The First Naturalist I met; a Disappointment.—Fine Solar Phenomena.—Catching and Poisoning Cats.—A Remarkable Dream.

I HAD heard much of the peculiar properties and disgusting odour of bromine, and longed to obtain some. It was not to be had in the town, so I sent to London for it, and obtained about one ounce, with which I made many experiments. I found that the element combined with every metal with which I brought it in contact, and possessed great bleaching power over organic substances. I had formed a solution of it in water for this purpose, which was contained in a large jar; this I unfortunately let fall in a close room, and the fumes nearly suffocated me. I could hardly see my way to the door, and felt intense pain in the throat. I however got the door open, and managed to get to the window. I wanted to cough, but could not. I got some water, and endeavoured to swallow it, but had some difficulty. I dissolved some soda in water, and took

a draught of this; it had a great effect. In about half an hour I could speak, but did not regain my ordinary power of speaking for weeks, and my voice for singing was permanently impaired. I continued to perform experiments, but with less pleasure than heretofore. I felt that many could not be safely performed without a properly constructed laboratory, and that I could not get accurate results without more perfect apparatus and purer chemicals. The success I had formerly attained would not now satisfy me. My chemical studies had been formerly so engrossing, that I often, unless urged not to do so, would gladly have remained in-doors all day, to the detriment of my health. The science of field natural history is more conducive to health than that of practical chemistry.

When spring came I devoted a good deal of time to bird's-nesting, and found a large number of nests and some curious varieties of the eggs of common species. I noticed what has, perhaps, not been previously observed—hybrids between the blackbird and the missel thrush. I took a good number of the nests of the Stone-chat (*Saxicola rubicola*), which it so cunningly conceals. I found a nest of the blackbird on the ground amongst the firs, and on one occasion a nest of the song thrush, without the usual clay or cow-dung lining, but merely a coating of the thorns of the





THE COWSLIP (*Primula veris*), Lewes.

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furze matted together. I obtained an egg of the Goat-sucker (*Caprimulus Europæus*), which I have never found very abundant. The eggs were laid in a depression in the ground, on half a handful of fern leaves.

The ditches which I previously mentioned as being prolific in fresh-water shells, afforded, as the season advanced, a great variety of interesting aquatic plants, such as the Flowering Rush (*Butomus umbellatus*), which appeared to me the most lovely water-plant I had ever seen. There were two species of water-plantain, and seven of pond-weed; five of ranunculus, the Water-violet (*Hottonia palustris*), the White Water-lily (*Nymphaea alba*), and the two Yellow Water-lilies, (*Nymphaea lutea*, and *N. lutea*, var. *minor*); the fringed water-lily also, which has its flowers and leaves in bunches, but it belongs to quite a different class; a large number of curious rushes and sedges, and an abundance of the common reed (*Arundo phragmites*).

I was never before in so good a locality for plants. The chalk hills afforded the Centaury (*Erythræa centaurium*), the Yellow Wort (*Chlora perfoliata*), two species of gentian, two of Rock Rose (*Helianthus*), two of orchis, and two or three of ophyrys—namely, the Bee and Fly (*apifera* and *muscifera*) ; also rarely the Pyramidal Orchis (*Orchis pyramidalis*). I dug up roots of the bee, fly, and pyramidal orchids, which

flowered in my possession, and, with the aid of liquid manure, I obtained, the following autumn, fine roots, which, on being planted, flowered splendidly the ensuing summer.

A small branch of the Ouse, called "the Cut," winds its lazy course among some meadows, and affords moisture to a plantation of willows. I would often visit this place, and sitting down opposite a bend in the river, gaze upon the yellow water-lilies, which grew in great abundance, or at my own shadow, which the water bore down the stream. Stretching over the water, I gathered some flowers and leaves of the lilies, adhering to which were often a variety of curious objects. The spawn or spat of *Limnaea pereger*, of *Neritina fluviatilis*, and *Ancylus lacustris*, several curious red and blue leeches, and, occasionally, minute crustacea. These I would often examine with a lens of an inch focus, which showed the circulation well in the body of the flat leeches. These lilies floating in the Ouse reminded me of Cowper's lines. One day I saw a lady and gentleman take their seat somewhat sentimentally under a willow-tree, and order their terrier dog to bring the lilies; but the poor animal, finding they were rather good, eat them up before he came to his master's feet. The willows and long aquatic plants formed a nice cover, a pleasant secluded shade, welcome to men and

birds, and there the sedge and reed warblers were particularly abundant, and the notes of the willow-wren and chiff-chaff were often mingled with those of the frog or the grasshopper. The Amber Snail (*Succinea putris*) abounded on the aquatic plants. I frequently noticed the dragon-flies feeding ; they are the terror of the gnats, to which they are really dragons. I have seen them catch and eat several in the course of a few minutes. They rejected the wings and head, as I found when I kept them together in a gauze cage. The caterpillars of the buff-tip moth were immensely common on the willows. I bred about sixty of them one season. I found also a colony of the caterpillars of the small egger, which had well-nigh stripped a hawthorn bush of its leaves. The larvæ of the curious China-mark moths (*Hydrocampus*) feed on the pond weeds and other aquatic plants. They have many remarkable points of structure, as one might expect from their habits. The Common Loosestrife (*Lysimachus vulgaris*), which is not found everywhere, was tolerably abundant ; and the Yellow Iris (*Iris pseudo acoris*). Its seed-vessels in autumn cast their orange-coloured contents. These, if roasted and ground, form no contemptible substitute for coffee, especially when mixed with the root of the dandelion.

In the hedges about Lewes, the *Arum maculatum* was very abundant. I dug up a hundred roots just

before the flowers appeared, grated them, and washed the gratings in cold water, and strained away the woody particles. I got a white powder, which, being repeatedly washed, was allowed to dry in the green-house. It was the starch of this plant which was at one time made for domestic use in the island of Portland, and was called British arrow-root. I took the trouble to separate the starches from barley, rye, beans, and several seeds and roots, but I had not then a microscope sufficiently powerful to enable me to distinguish them, which is so often done in the present day by analysts.

In my first year's residence in the town, I collected about 500 species of flowering plants within a radius of three or four miles, and to most of these I added the names and localities; but being less exclusively employed with botany, my collection was not so carefully arranged as formerly. I gradually became more devoted to entomology; not that I ever studied insects physiologically. I did not, like Swammerdam, spend days and weeks in dissecting a single insect, and in making drawings of its various parts, but I loved to observe them at their homes, or as visitors in my insect cages, or as mementoes of work done in my cabinet. I used to sit for some hours after dusk during the summer and autumn months at an open window, exposing a light to attract moths. In this way I obtained

several species of greater or less interest, one being *Cosmia diffinis*, and the other the swallow prominent (*Leiocampa dictaea*), and a large number of common species. A Long-eared Bat (*Plecotus auritus*) flew into the room one night. This I caught with my butterfly-net, and preserved for some days in a box, feeding it on butterflies, of which it eat only the bodies. On being touched it uttered a shrill shriek, which has been compared to the cry of a child. I bred several females of the oak egger moth, and placing them in a cage at the window by day, was interested to observe the visits of males, of which I captured several with ease. They were apparently fascinated, and lost their usual instinct of self-preservation. The lanes afforded a large number of species of *Geometrina*, *Tineina*, and *Tortrices*. These I caught with my sweeping-net, which also assisted me in obtaining a considerable number of larvæ, of which I reared during my residence at Lewes about forty species.

During the day I looked very diligently for butterflies and other insects, and obtained a number of interesting species, such as the small Elephant (*Chærocampa porcellus*), *Odonta dentalis*, and the *Colias hyale*, or pale-coloured yellow butterfly. The discovery of this last led to an interesting visit from an experienced collector. I noticed a butterfly that was new to me flying over the grass on

Cliff Hill. I pursued it for a quarter of an hour, and at last it disappeared. I took a farther walk, and on returning home I saw it fly near the very spot where I had missed it; but, with a little patience, I had it in my net. A gentleman, who was carrying a net, came up at this juncture, with whom I entered into conversation, and he offering to give me information, I asked him to call on me, and we had about three hours' most interesting chat. As this was the first naturalist worthy of the name I had encountered, and the first man who had contributed papers to a society which had been "published in their Transactions," I was anxious to make the most of him. He was himself in delicate health, and said the conversation, being earnest and intense, confused his head. I made some impression on him; for after the lapse of many years he remembered his visit, although I had not seen him in the interval.

I could hardly describe my feelings on first meeting men of science, of whom I had formed wonderful ideas. I imagined them to be free from the defects to which ordinary men are subject—Adams, enumerating lower forms of life over which they watched with the tenderness, dignity, and understanding of master-minds. When in after years I had a more extensive acquaintance with scientific men, I found that they in nowise

differed from the unlearned. They were subject to the same meanness, the same narrowness of mind, love of the minute, and contempt for the great; the same bitter struggle for an existence; the same tendency to gather under the mantle of knowledge an epitome of every vice common to man, which could find no lodgment on the statue of truth unless "ventilation" were impeded, as it often is, by cliques and learned corporations.

WHATEVER SCIENCE WAS IN FORMER AGES, IT IS NOW ONLY EXPOUNDED BY OUR SOCIETY.

I always listened to the voice of beauty either from earth or heaven, and although but little acquainted with astronomy, still I could watch with emotion the convulsions of the clouds, and observe the visits of the celestial bodies. I have for many years kept a record of striking phenomena which I have seen in the sky. "On the 10th of February, 1854, at 4 P.M., as I was walking along the High Street of Lewes, I observed a large circle of yellow light in the sky towards the setting sun. It was orange in the centre, gradually shading through various tints of yellow into snow white, which was streaked with blue. It kept in motion, as nearly as I could tell, about 30 min. 10 sec., and gradually decreased in magnitude till nothing appeared but a streak of yellow light. When its circumference was at the

greatest, it appeared about four times the sun's diameter. The wind blew from the north-west during my observations."

I was very much annoyed shortly after this with cats, which, in addition to disturbing me at night by their noisy courtships, delighted to scrape in my little garden, to dig up my plants of valerian and catmint, and otherwise misuse my flowers, and even to break my bell-glasses. I tried water, with which I soused several noisy "toms," but this, although it gave them a wholesome dread of me, did not scare them from the garden. I got a large gin, hoping to catch a puss, and make an example of him. I set it one night, baited with a fish's head, and in the morning, before daylight, I heard a terrific shrieking, which lasted for about half a minute. On going to the trap I found a quantity of fur scattered round it, and about half an inch of the tongue of puss impaled on the teeth. I set my gin the next night, and got about two inches of the tail from another cat. I recognised the two notorious offenders by the colour of the relics they had left, and these never troubled me again; but there were still two more which caused me great annoyance. I boiled some meat in a strong solution of white arsenic, and stuffed a sparrow with a compound of liver and strychnine, and, going into my greenhouse, I began mewing. No less than four cats gathered in the

garden, and two had a fight for the possession of the stuffed bird. A tremendous "she" carried it off, and I never saw her again. A mongrel "Angora" devoured the poisoned meat, and half an hour afterwards was seen in the court-yard of a neighbour in great agony. I suppose she brought up all she took; for a week after she was as well as ever. Arsenic is not a *nice* poison for animals; they often cast it up in places where it may be injurious. It is often unsuccessful in its object; but may do harm to those that it is desired to protect. This poor cat would often peep over our wall and "swear" at me, but I never saw it in our garden after this.

Lewes, like most small country towns, was a nest of gossips, who resented the appearance of intruders, and, like a colony of wasps, poured venom on their person and property. Among those who were thus stung, may be mentioned a tradesman in the town who, not having succeeded in business, had taken up his residence in the last refuge of the destitute—the workhouse. An old woman, who was also an inmate, had a remarkable dream, which turned upon the subject of great interest to all paupers—money. She dreamed that she dug in the cellar of an old house, and there she found a large sum. She communicated her dream to the other inmates, and received nothing but ridicule from all, except the man I have named. He was induced to leave the

workhouse, and make excavations in the place mentioned in her dream. He did not tell what he found, but a very few months afterwards he began to purchase property, established himself in business, and eventually appeared to be—for a small tradesman—a wealthy man. The poor woman who dreamed of all this wealth, died in the workhouse, unheeded by the fortunate tradesman, on whom the opinion of his compeers fell somewhat unfavourably; but they, doubtless, like the insects of which I have spoken, envied the possessor of a richly-stored hive.

CHAPTER XXV.

Russian Prisoners at Lewes.—Melancholy Story of Captain Ivan
and Mary Jane.

A LARGE number of Russian prisoners, quartered at Lewes during the war, were confined in the old gaol. They made many toys, which they sold to the visitors, and in this way amassed large sums. The toys were of very rude workmanship, but some were on ingenious principles ; for these they demanded from 6d. to 2s. 6d., which was freely given, and some men accordingly made during their year's captivity as much as £80. One man was very industrious, but he could sell more than he could make, and accordingly sent a large order to Germany for toys. Our conduct to the prisoners was absurd. The officers were let out on parole, and were allowed, what appeared to them, enormous pay, being several times as much as they received when in the active service of the Russian Government. The officers enjoyed their captivity much, for they were frequently invited to parties by the residents of the town and neighbourhood. They mostly lived in

lodgings, which they sadly defiled. Several entered into engagements with English girls ; but these, except in one or two cases, were quite forgotten on their return to Russia.

Ivan was a handsome young man, of a tall and graceful figure, but with light sandy hair, and a sallow complexion ; he was quiet in his manners, and gentlemanly in his habits, and this he might well be, for his father was one of the old *noblesse* of Poland. He entered the Russian army as a "younker," but soon his superior intelligence enabled him to obtain a commission, and his gallantry in the Caucasus, in which he stormed a fort which had long been considered impregnable, raised him at the age of twenty-five to the rank of captain. He was sent to Bomarsund, where, in defending an embrasure in that place, he was wounded and taken prisoner. His captivity was not thrown away. He studied English and English history, and a new light broke on his mind. His free and independent spirit began to rebel against the slavish subjection in which Russia held her sons. He next fell in with some Polish exiles, who inspired him with the hope of some day assisting to raise the standard of independence in that once great country. He was a good French scholar, and read many revolutionary journals in that language, and at last was induced to become a member of a secret society,

which had its head-quarters in Paris, but, for its aim, the overthrow of Russian dominion in Poland. He had an old uncle, a major in the same corps, who was also with him a prisoner at Lewes. This man, although thoroughly Polish in sympathies, had no faith in the success of the Parisian society. He promised never to betray him, yet used every endeavour to induce his nephew to emancipate himself from the yoke of *camarillas*; but the young man was too deeply entangled to escape without a violent effort. The uncle had a beautiful daughter, who, educated at Paris, had cultivated to the utmost extraordinary gifts and graces, which rendered her the "Queen of Hearts" at Cracow. She was much admired, and her mother had many offers for her, but her affections appeared entirely fixed on her cousin. They had been betrothed a few months before he was taken prisoner. A warm correspondence was maintained, although the young lady, in the interests of her betrothed, considered it prudent to inspire admiration in the commander-in-chief of the district, who, moved by her charms, promised to use his influence with the Emperor to get him promoted to the command of a small but important fortress, which was considered a lucrative post in the Russian service.

Captain Ivan mingled somewhat in society at Lewes, where his fine person and amiable manners

gained him many admirers amongst the fair sex. He was not always select in his associates, and condescended to visit the family of a tradesman in the town. There he met a young girl of Brighton, an assistant to a fashionable milliner, who was no less remarkable for her personal beauty than for the elegance of her dress and demeanour. She was so much admired that numbers of young men of her own class followed her, and she was offered a large salary by the proprietor of a cigar divan in London, as an ornamental piece of furniture. She was two-and-twenty, with a complexion like a rich golden nectarine ; glowing, but with an exquisitely delicate tracery of carmine, and eyelashes which were said to be bewitching. She took a violent fancy to the captain, and almost every Sunday came over from Brighton to see him. He was at first polite, though rather cold; but at last, yielding to the wiles of the enchantress, became apparently the most fervent of lovers. She wrote to her friends that she hoped to be married as soon as peace was concluded, to go to Russia, and to become a Countess, and to find sinecures at court for all her relations. The uncle smiled at the intimacy of the pair. "He is a young man," thought he, "and such require always a lover of some sort on the spot. He will forget her when he sees my darling Maximillienne."

The war was over, and the uncle and nephew

departed amongst the other officers. A strange scene occurred at the Lewes station, as a special train conveyed away the officers and the men. Crowds of spectators assembled on both sides of the line; of these the greater part were women, some of whom had given away their hearts to the prisoners. Fearful of broken vows, some shrieked; others of more refined feelings displayed their grief in silent tears; while others, pale and haggard, waved the sickly hand or white handkerchief of peace.

The parting of Captain Ivan and the fair milliner was long and fervent. He had made her few promises, but expressed the deepest regard for her, and said that he hoped to see her again. He arrived at Cracow, the bearer of letters to the revolutionary committee there; but life in England had made him confident and careless, and his conduct excited suspicion. He was sent for by the commander-in-chief, interrogated, brought to a court-martial, and sentenced to be degraded from his rank as a Russian officer, to lose his hereditary rights, and to serve for fifteen years as a colonist in Siberia. Maximillienne, his uncle, and all his friends were in great distress, which they concealed for fear of being implicated. The commander-in-chief sent for the uncle, and said, "I have strong suspicions of you, and were I not on the point of asking you a very great favour, I should put you at once under arrest.

I have long adored Maximillienne, and now ask you to give me her hand." The old uncle was thunderstruck. The general did him "too much honour;" he could not afford to give his daughter a portion suitable to so distinguished an alliance. He thought a subaltern much more suited for her. "My dear major," said the general, "I am not only quite willing to take her without portion, but I shall have much pleasure in doing something for you, so I shall recommend you to his Majesty for a colonelcy." "Your generosity overpowers me," was the reply of the cringing major. He, however, said his consent would be somewhat dependent on the wishes of the young lady. "We are sworn friends," said the general, "and had I not been sure of her favourable inclination, I should not have sent for you." "But she is overpowered with grief," rejoined the major, "at the calamity which has come upon Ivan." "This is but natural, and I commend it," was his reply; "but I shall hope to make up to her for her loss, and to you; for if you lose one son-in-law you will gain another."

Ivan was confined in the castle, where he was kept for some months. On the day of his departure for his long and melancholy journey, the fair Maximillienne was married to the general; but ere this Ivan had written a long and affectionate letter to his young English friend, in which he recounted his

trials and his sufferings, and the still greater hardships he expected to undergo, and the many months' journey on foot which awaited him. He received a reply which took him by surprise. Mary Jane, for that was the name of the young woman, proposed to leave her country and share his fortunes. She had lately had an offer of marriage from a wealthy tradesman, who could have given her every luxury, and whose high character and refined habits promised happiness. Ivan would not hear of her proposal. He wrote advising her to accept comfort even at the expense of a romantic attachment. She replied that if he scorned her offers she would remain at home, but if he would let her she was willing to share his lot. He said that he did not think he would be allowed to take a wife to Siberia. She said it would be a privilege to follow his footsteps even if they could be but little together. She inquired his route, and fitted herself out for the journey, and taking a small knapsack of necessary clothing, she started for Poland, but arrived at Cracow two days after he had quitted it. She had an interview with the governor, and frankly told her story, and how she had come from England with the hope of being allowed to share the trials of Ivan. The governor had just been married, and was in high good humour, but the request of a passport for such a purpose appeared to him so strange that he at

once declined granting it, and advised her to return to England with the utmost despatch. She prayed, and entreated, and flattered, and at last induced him to grant her a passport for a town on her way to Oren. She purchased a horse and pursued her journey alone, and reached the town just as the cavalcade of prisoners had entered it. Her passport was taken from her at this place, and she wandered about the streets looking for lodgings. She accosted a Jew who sat at his shop-door, selling fish; and received a gruff and surly answer. She at length reached a shabby hotel, which was called "The Prisoner's Home." This title attracting her, she entered, and inquired for apartments. She was told that the hotel was full of prisoners, and that there were no quarters for a lady like her. On hearing that the prisoners were there, she expressed great anxiety to remain, and said she would put up with what accommodation she could get. She had attired herself in a plain grey costume, and endeavoured to hide her face in her bonnet and cap as much as possible. The landlord at length said he would speak to his wife, who, on being called, said she could accommodate the stranger in her room. Mary Jane saw her horse stabled, and prepared for the night. In the room where she had taken up her quarters were six persons—the master and mistress of the house, a grown-up son and his wife, and a

grown-up daughter and her husband. This, which appears revolting to English ideas, was in strict accordance with the usages of the place. It was not until she had retired, however, that she was aware of who were to be her companions.

About twelve o'clock at night they were disturbed by the entrance of three men, who proceeded to roll themselves in their blankets and stretch themselves in front of the fire. These conversed for some time, and she thought she heard a well-known voice. She listened, and she was sure. On this she began talking to herself in English, and one of the men started up on his feet. He walked to the couch on which she lay, and a happy recognition followed. He had been made to sleep in a barn among the other exiles, which was cold and uncomfortable. When the rest were asleep he persuaded one of his guards to take him to a warm and comfortable room. The pair were whispering all night, telling their trials and prospects. Ivan advised her to return: "To go with me would be doubtful of success, and would certainly expose you to trials of which you have no conception." But these arguments had no influence on her. "You have no chance," he said, "of going without a passport, and that will never be granted to accompany me. Your only chance is to offer your services gratis to the captain in charge of the prisoners, on condition of being included in his passport as his

servant. He is a rough and coarse man, and will not treat you well. I again beseech you to return." But Mary Jane was obstinate. She spoke to the captain the next day, and said she had come from England to follow the fortunes of this exile, and would be glad to be his servant if he would give her his protection on the journey. The captain stared at her, and asked if she were mad; but afterwards he consented, and got her name entered on his passport, and she pursued her journey with the troop. Ivan was allowed to speak to her every third day, and she went in the covered cart of the captain, to which her horse was harnessed. She was so ill-treated that she wished herself dead, at home, or anywhere, and only the thought of being possibly a comfort to Ivan, prevented her from self-destruction. She acquired considerable influence over the captain, who was disposed, in his rough way, after a while to be kind to her, and even talked of marrying her when he got to Siberia. She was allowed to converse with Ivan, only in presence of himself or that of the lieutenant second in command. But she managed to convey her feelings of desperation to Ivan, who burned to avenge her injuries.

The party, after some months' weary travelling, at length reached the Ural range, and Ivan determined to put in execution a long-cherished project of revenge on the cruel captain. He was handcuffed

to one of the other prisoners, who, being ingenuous, had manufactured a wooden key which would turn the bolt which fastened the cuff. Not wishing to expose this man to punishment, he contrived to be coupled to another man, noted for the heaviness of his sleep, but retained in his clothes the wooden key. As they slept in the prisoners' shed Ivan managed



Ivan and Mary Jane in the Snow.

to undo his irons, and, setting off at full speed, reached the quarters of the commandant. He had been drinking with Mary Jane and several of the officers, and all except herself were drunk. He seized a sword of the commander and plunged it

into his heart. He gave a slight groan and expired. Mary Jane and himself mounted horses and re-crossed the mountains on their return towards Europe. They were entertained for the night at the house of a peasant who had great sympathy with exiles, and who himself, on committing a great crime, had of his own will taken up his residence in this distant part of the country. They told him their story, and he promised to communicate their fate to their friends in England. "But," said he, "you must not remain an hour longer with me. Flee while it is yet dark." They missed their way, and after wandering all day in an unknown country were overtaken by a snow-storm. They fought against it long, but at last, exhausted, lay down to perish. The peasant, a man of education and culture, found their corpses some weeks afterwards in a snow-drift, which was not very far from his house, and, redeeming his promise, conveyed the story of their trials and melancholy end to the mother of Mary Jane.*

* This story was related to me by a German lady who knew the parties, and I have more than once seen the lovers walking together.

CHAPTER XXVI.

Refreshing my Reminiscences of Lewes.—An Interesting Day to the Naturalist.—I obtain a Great Variety of Species, Plants, Insects, Shells, and Fossils.—Remains of a Supposed Antediluvian Man.—A Second Cuvier.—An Enthusiastic Collector.—English and Foreign Naturalists Contrasted.—Humboldt and Shakspere; their Vast Attainments.

SOME years after I left Lewes I visited it for the day, and called on my old acquaintances—Human, Zoological, and Plant. It was on a fine day in July; the air was comparatively still, and the sky clear. It was the Paradise of weather, and I promised myself, as I entered the little town, the indescribable pleasure of awakening old associations. I visited the swamps and ditches beyond Southover, some of which bound the precincts of the Priory, part of the ruins of a Norman abbey founded by Guinever, the daughter of William the Conqueror, who gave her hand to William de Warenne. Their cists are still to be seen in Southover Church. I wandered among my favourite ditches, and observed large dragon-flies (*Libellula quadrimaculata*), flitting in considerable numbers, and among them a fine variety with large spots and brown mottled wings.

The Water Soldier (*Stratiotes aloides*), was in full flower, and the Water Figwort (*Scrophularia aquatica*), on the leaves of which I noticed a beautiful caterpillar in considerable abundance; it was pure white, with large yellow and dark spots. This larva produces the moth known as the Figwort Shark (*Cucullia scrophulariae*). I next visited the hillock known as "the Dripping Pan," which overlooks the Priory, and affords a fine view of the lower parts of the town. I observed the uncommon shrub snail (*Helix arbustrorum*) among the hedges near the spot, but never found it in great numbers. In a ditch near here, in former years, I obtained a solitary specimen of the intermediate Bladderwort (*Utricularia intermedia*).

On passing through Southover I came upon a great number of plants of the evergreen alkanet (*Anachusa sempervirens*), a rare plant to be found in a wild state. Its near ally, the Viper's Bugloss (*Echium vulgare*), one of the most gorgeous of our British plants, and worthy of cultivation, is found on Cliff Hill.

We got permission from the proprietor to visit Lewes Priory, but we had often before wandered through its ruins. Among them is an arch which was almost entirely filled with rubbish. Tradition said that this was connected with a subterranean passage, which in mediæval times connected the Priory and the Castle. We ascended Keere Hill, and entered High Street, which we crossed, and took our way to

the Castle, the keep of which is let to the Sussex Archæological Society as a museum. We paid six-pence, entered our names, and viewed the little collection of local antiquities. We went up the stairs and entered a room, round the walls of which were rubbings and tracings of monumental brasses; and after several other stairs had been climbed, we came upon the roof of the tower, which affords a very fine view of the hills and well-watered meadows which bound Lewes. Cliff Hill is a grand object from this point, as from the Offham Road. Gilbert White had a great respect for the "mountains," as he called them, of Lewes. The walk to the race-hill is delightful, especially through "the paddock," a fine undulating meadow, bounded by a row of stately trees. Many interesting plants are found there, as well as insects; and certain birds, such as the stone-chat, breed in tolerable abundance, while, a little beyond, a copse affords a number of plants of considerable interest, among which may be mentioned the Raspberry and the Rosebay Willow-herb (*Epilobium angustifolium*). Near this I had noticed a singular union of a hawthorn and elder-tree, whose spreading branches afforded lodgment to the missel-thrush and blackbird, the pairing of which I have before noticed. A portion of the land below the race-course was taken into cultivation, and being enriched with guano, produced an abundant crop of

magnificent wheat. This down yields, likewise, a very curious and interesting plant, the Round-headed Rampion (*Phyteuma orbiculare*), the singular formation of whose purple blossoms renders it one of the most striking of our British wild flowers. The corn-fields in the neighbourhood of Lewes afford some interesting plants, such as the Penny-cress (*Thlaspi arvense*), the Corn Gromwell (*Lithospermum arvense*), the Corn Bell-flower (*Campanula hybrida*), the Creeping Toad-flax (*Linaria reptans*), and the Narrow-leaved Flax (*Linum angustifolium*); the English Flax (*L. Anglicum*), the Perennial Flax (*L. perenne*), were also there. Of the two last I once collected a good bunch, which I macerated in water, and obtained about two ounces of fibre, which, on being examined by a "dresser," was pronounced suitable for weaving. These plants are both indigenous.

I next visited the slopes of Cliff Hill, where I observed the Chalk-hill Blue butterfly (*Polyomatus corydon*), and the Cliffden Blue (*P. adonis*), in considerable abundance. These I had formerly obtained in hundreds at this very spot, together with varieties of other orders. This was on the right-hand side, but on turning to the left, and walking along the road, we came to a house which had an open passage through it. This led us to the Coombe, which presents features of great geological interest.

Its sides are very steep, it being a trench deeply cut between hills some hundred feet in height, and dips downward towards the low parts of the town. It is a nice place for archery, and at that time a target was mounted, at which some blooming girls



Turritellitus costatus, from the Chalk Marl near Lewes.

were practising. The aspect of the place is gloomy ; little grows on its sides but short grass ; the air is usually oppressively still, and the human voice reverberates in the confined space as in the vault of a sepulchre. On the sides we have noticed among the roots of grass *Clausilia bidens*, *Pupa juniperi*, the *Carychium minimum*, *Vertigo sexdentatus*, and *Pupa muscorum*, which, with some of the smaller shells referred to, is frequently the prey of the

larger slugs, *Arion* and *Limax*. After a long and fatiguing, but most enjoyable ramble, we returned to a late dinner, which, having set us on our legs again, we determined to visit those chalk quarries on the Offham Road which afforded Dr. Gideon Mantell so many fine fossils. Having looked with some care, I succeeded in obtaining a number of fine specimens of *Plagiostoma spinosa*, a species of *Galerites*, spines of *Cidris* of different species, an *Echinis* or two, a *Terebratula*, and a *Rhynchonella*. Among a heap of flints which had been extracted from the chalk for mending the roads, I discovered a curious sponge, in form resembling one of those pestles and mortars which are used for pounding roots and tough gums. A luting of chalk connected the solid "pestle" of flint with the "mortar," also of the same material; but when this was washed out, it was easy to rattle the two. On showing this to one of the labourers who was breaking the flints, I was assured that these were all the pestles and mortars possessed by the ancient Britons; by which, of course, my unlearned informant meant the "stone period." I had formerly obtained in that very spot singular flints, resembling in shape sundry parts of the body, such as the fingers, hands, legs, breasts, and nose. These were, *of course*, relics of the men who lived before the flood, petrified. An ingenious inhabitant

of the place had gathered together, during the course of a long life, a large collection of these flints, which, with a book of anatomy as his guide, he had cemented together with plaster of Paris, and formed no contemptible representation of a man standing, between two or three feet high. This he considered a great curiosity, and himself an eminent anatomist, or, as his wife termed him, "a second Koo—v—a."

I did not neglect a short visit to two of the more intelligent naturalists of the town. One of them, a tradesman, was a diligent collector of, and dealer in, insects, in the capture and arrangement of which he spent the greater part of his leisure time. He was not a clever man, although a successful collector. He knew where to find insects, and a good deal about them, but was not in the least degree scientific. He had managed, however, to get together some thousand insects of at least five hundred species, and was liberal in giving information with regard to localities and specimens to young collectors who could not afford to purchase them. This man, in the expenditure of his money, showed more wisdom, and had a much higher value for knowledge, than most even of acknowledged scientific men. He divided his income into five parts, of which two were spent on housekeeping, one on books, one was saved, and the remainder spent on science and the

relief of distress. This little man had accumulated, in the course of twenty years, a library of about three hundred volumes, among which choice editions were very numerous. He would sometimes give as much as £7 for a valuable set of books, which were not afterwards left entirely on the shelf. I was led to contrast the humble life of this man, and his taste for knowledge and judicious expenditure, with that of many of the middle and upper classes in this country, who are certainly less refined and intellectual in their tastes than similar classes possessing fewer advantages in Germany and France. In England the setting has come to be more valued than the gem. Books are chiefly valuable when well bound on large and thick paper, and, above all things, "UNCUT."

This applies especially to scientific works, which from being little *used*, little *printed*, and little *sold*, are consequently for the most part published at an enormous price in proportion to the amount of valuable information they contain. When we examine similar publications on the Continent, we find them one-half or one-fourth of the price, printed on rough paper, and only "sewed;" but they are in the hands of many; for where we find one man in England who reads scientific books, we find seven in Germany, or two in France, and these do not require "book dandyism" to make science

palatable in their eyes. In turning to the cabinets and collections of naturalists, we find that the scientific value of the specimen is what is most regarded on the Continent, while in England it is its neatness and symmetry in the cabinet. There are few collectors on the Continent who would pay £20 or £30 for a cabinet; they would think it a piece of extravagance quite inexcusable; but would view in a different light the expenditure of a similar sum on books or specimens of great interest and importance, which is held as equal folly by their British brethren. So touchy and particular are some English collectors about the setting and symmetry of insects, that quarrels and disputes have been often founded on this point alone, and an outcry even raised against those who have ventured to mount or arrange their specimens in a manner which is usually thought to be "un-English." These men, who are less numerous than they used to be, have to learn the rudiments of science. But English collectors, when they are scientific, are the best in the world; yet it is a rare thing to see an English naturalist, or scientific man, who is large in his views. They are practical, and "compass sea and land" to gain a specimen in order to make a local collection complete; but their deficiency in acuteness, from a predominance of the "physical type," renders them unable or unwilling to grasp the literature of the

subject. This knowledge is not scattered, as in Germany, amongst the many, it is resigned to a very select few. This is the accompaniment of a tendency to ignore what is published, and to dwell entirely on what they or their *clique* have done. The most scanty skeleton of facts which *they have observed*, so meagre that it is difficult to tell what they prove, is often the subject of endless debate, to the neglect of the recorded observations of ages, out of which truth may rise in the majesty and perfection of a new resurrection. Foreign *savans* are subject likewise to great defects; “literary rubbish mountains” are more common with them than even amongst ourselves, as is superficiality in the treatment of subjects, their attention being more diffused than our own. Excessive enthusiasm and dogged perseverance, which raise an edifice from the ground, are less common in France, while more skill in arranging the materials is displayed. Our defects are less radical than theirs. A day will dawn which will see the garrotte placed on the throat of snobbism—the murderer of much that is intellectual and moral in the age. The lust for gold has now ground many of the choicest crystallisations of science and art, for the sake of their money value in the gross.

But let me now return, after this long digression, to the time when I was an inhabitant of Lewes,

and to the days when I held daily converse with its living forms. I obtained a good many books from an excellent library there, and among them Humboldt's "Aspects of Nature," a work which I read and studied with intense interest and care. I was pleased for the first time to see an extended practical acquaintance with life in many parts of the world, combined with a profound knowledge of books, ancient and modern ; thoughts clothed in language which, if sometimes obscure and stilted, was often in harmony with the glowing richness of a world round which revolves an endless chain of beauty. The book produced a more profound impression on my mind than any which I read in my early years ; it appeared a noble pile of genius, learning, and industry. I wondered how one mind was equal to so great a task ; for there the naturalist, the poet, the philologist, and the mathematician fight hard for supremacy. I would often take this book to the fields, and contrast the glowing descriptions of other lands with the modest but health-inspiring beauties of our own. But there was one great defect in the work.

"We start, for soul is wanting there,"

although life in various forms palpitated through its pages. I read the early career of the author, and found that his great eminence was to be attributed mainly to his individual exertion, to the

concentrated application of his mind to the details of one subject. For some years he studied botany, for some chemistry, for some zoology, languages, and mathematics. He raised himself to the pinnacle of knowledge; he sat down on the seven hills of science; and long reigned over an empire in European philosophy. The impression produced by this book has never subsided, and the example of what one man has done served as a stimulus to me in perseverance in opposite branches of science, which while they increase the labour in the husbandry of knowledge, and delay the harvest, and doubly tax the tiller of the soil, still the crop is richer, and in the end will feed a larger portion of mankind.

I had previously studied science from the love of knowledge, and with the general belief in its value to myself and others, but without that clear and definite plan which sees in the course of life a great engine of which circumstances form the fuel. My course of reading now raised thoughts of this character in my mind. I resolved to enter more boldly those departments of which I had previously only knocked at the doors, and when on terms of familiar acquaintance I might hope to be allowed to take liberties with the edifice of knowledge. My mind was now awake to the delights of literature. I carefully read and studied choice extracts from the best English authors, both poetical and prose. But

the greater writers I considered in detail; none more than Shakspeare, whose plays afforded me intense delight. Nature is here depicted in true colours, and her representative man, Shakspeare, comes forth as her exponent. There he stands with poised lance—his pen, a challenge to all, in literature, or the science of human nature through every age. Shakspeare, the literary Achilles, thrusts before his name invulnerable shields—dramas for all time.

CHAPTER XXVII.

An Enthusiast in the Fine Arts.—The Greek Slave.—The Story of Albano and Clio.—A Desperate Fight.—The Slave Market.—The Heroic Woman.—Rescue and Death.

I HAD a great admiration for the fine arts, especially painting, engraving, and sculpture ; these acting on my mind, gave me a most lively conception of the scenes they represented. A small engraving, from the work of a great master, assumed grand proportions in my eyes, and often inspired emotions as vivid as those in the mind of the child, who, for the first time, views a landscape through a reversed telescope ; nature is there seen on a reduced scale. An engraving fell into my hands which represented Hiram Power's statue of the Greek Slave. Struck by the noble outline, I, without any notion of a tale which it illustrated, pictured to myself the story of a life.

There she stands in mute innocence, and heeds not the rude words of the licentious crowd. They have no sympathy with her, or she with them. She feels herself as much alone as when in the recesses

of her chamber she unveiled herself before grim night. I conceived a story of which this lovely and pure conception formed the heroine.



The Greek Girl.

Within sound of the bees of Mount Hymettus; within scent of its fragrant honey; within sight of immortal amaranth, she was born. The companion of the gentle lambs in her childhood, she wreathed them with the sweetest scented flowers, which perfumed the air as they gambolled to lick the mountain dew. With Arcadian simplicity, she was seen at the spring every morning to fetch water for her favourites, in a

vase of exquisite form, during those years which entwine the woman and the girl. The only child of loving parents, they considered her as Cornelia did,—a treasure in a chaste and comely setting; and many a parent, barren, or less richly furnished, might have coveted their jewel. Long before she attained woman's stature she wooed sweet minstrelsy, the offspring of the lyre; this soothed her spirit in the many little trials of the girl. She was the admiration of the whole country round, and the sons of the neighbours would watch her movements in order to pay her those acts of tender homage which noble beauty among womankind inspire. Before she had sounded the depths of love, Albano had won her sisterly regard. He was as innocent as herself, and wished always to be as a brother. When he was grown to man's estate, his father, whose vines had failed for some years, said he would send him to Candia, to an uncle there, to learn the mysteries of traffic, and gain an honest livelihood. Albano was distressed at this news, for he was to tear himself from his home and all he loved; but he saw in the project his only hope of comfort and progress in the world. He met Clio among the vines; told her of his journey, and that his love was sweeter than a brother's; then pressed her fervid hand and asked if she felt with him. She, who never to this hour had been abashed in his company, turned aside, cast

her eyes down, blushed like the apple blossom, and murmured “yes.”

Years passed, and saw Albano, from a ruddy youth of seventeen, return a man of twenty; and Clio, from a pink-tipped bud, expand a glorious flower. Albano had been fortunate in trade, and was now the captain of a felucca-rigged coaster, which was renowned for its swiftness; and many a voyage he had already made, bearing luxurious freight from isle to isle. He visited the friends of his boyhood, and took to each some relic of his travels. He was received with tenderness by all, and by none more than the parents of Clio, who asked him what he would like in return for his presents; and he replied —“Your daughter.” They were betrothed that day with the solemnities of the Church, and it was agreed that in less than a year they should be united; and Albano departed for Candia. He gathered, in anticipation of his happiness, graces around his abode, regardless of cost. Nothing he had was good enough for Clio; with such a treasure he could never be poor. His uncle was ill, and Albano’s attention was constantly required at this grand seat of commerce; and as the tedious months, one by one, expired, Albano feared that he should not be able in person to claim his bride. He wrote to her parents, and they, not wishing to disappoint the ardent

youth, agreed to bring their Clio and settle near her new home.

They embarked on board a fine felucca, and for the first day the voyage was pleasant; but then a sultry south wind blew, which parched the skin and made all the timbers shrink. It died away, and the sails flapped exhausted against the masts. They used the oars, and steered for their port. The night came on, and clouds gathered thickly in the sky, and the older mariners predicted a tempest; still they rowed on. At length they heard a noise of quiet rowing to windward, which increased, and they perceived a felucca full of armed men. The captain said, "That's a pirate! all men must fight." Cutlasses and swords, scimitars and pistols, were got ready; but ere this was done they were alongside the pirate. "Surrender!" said the chief, who amongst his men was distinguished by a red cap. The captain on this took aim at the chief's head, and in another minute he lay a bleeding corpse on his deck. The pirate next poured a volley of musketry and grape among the crew of the merchantman, which they returned; but being less used to arms, were feeble in their fire. The pirate boarded them, and the leader said, "Submit, or every male shall die!" But the captain and his crew not fearing death, fought to the last, and only when wounded and faint fell down. Clio and her mother, deep in the

cabin, loaded the pistols which conveyed the message of death to many a bloody pirate, and the elder woman herself slew several who crossed the skylight.

But all is over ; and the furious pirates, forcing the door, rush down below. Two women, terrified in horror, lie faint on the floor ; but Clio and her mother are made of sterner stuff. The mother stands in front, and under her cloak she hides a dagger and two pistols, but speaks fairly to the pirates. " You will not find," she said, " much wealth, but what there is you shall have. He who touches my person shall die." She was met by laughter and coarse language. The captain approached her, after having searched the ship, and, finding little, was vexed. " You have," he said, " jewels concealed about your person. I shall examine you." He approached, and put out his hand to touch her robe, when she, fire flashing from her eyes, discharged a pistol at his chest, and he fell speechless. There were two more pirates in the cabin ; one of these received a ball in his mouth, and the other a dagger in his throat. The four women sprang up and closed the cabin door, and, putting up an iron bar, once more defied the pirates ; not losing a moment, they at the command of the mother loaded the pistols, in hopes of being able to preserve their lives. The cabin was dark, and their forms could scarcely be seen. The pirates fired many

a ball into the cabin, but all their efforts could not burst the door. The mother, now a widow, although she knew it not, fired at the forms which crossed the skylight, and five more strong men were thrown overboard. At last the third in command determined to set the ship on fire, and so he poured burning pitch into the cabin. "They will finish us now," said the mother; "but let us die like Spartan dames!" She loaded her pistols once more, removed the iron bar, which, glowing from the fire, left the skin of her hand to fry upon it. The door was open and she rushed on the deck. Twelve pirates, armed with scimitars and spears, stood watching the smoking cabin, thinking that fire would fight more bravely for them than other weapons; but when they saw the furious hag rush blazing from the cabin, they in terror fled from her, lest they should be wrapped in her inextinguishable flame. She followed and fired three deadly shots, and drove a heated dagger into another's ribs. Being bathed in flame herself she had no hope of life, but making a desperate spring she reached the side of the pirate ship, and rushing below she sought the stores of pitch, in which she dipped her flaming garments and expired. But with the smoke of her cinders arose that of their ship. The pirates were awe-stricken, and exclaimed that she was a Ghoul from Gehenna, and made no efforts to extinguish the fire.

While this was going on, the two women, dipped in flame, flew up the cabin stairs, and after them, Clio, whose garments being of wool, were not much burnt. They all sprang into the sea. The two women, having but little spirit, sank; but Clio swam and floated, until, seeing the pirate's boat put off, she dived. They rowed to the spot, and as she ascended, she was seized and lifted on board. This boat contained all the survivors of the two ships, not more than twenty in number. They, in desperation and rage, were at first inclined to put her to death; but one of the number said she would sell for a good price at Stamboul, and offered a piece of money to each of the crew for his share of the spoil. To this they all agreed. The boat rowed on; the ships, burnt to the water's edge, sank in their sight. At last they neared their "nest," a little islet clothed with wood, on which they landed, and Clio, thickly veiled, was given into the charge of a black woman, with whom she stayed three days. She was kindly treated, that grief might not mar good looks—beauty bears a high price in the "City of the Sultan." Dejection seized her. "I hoped to be a bride ere this, but now I am a slave!"

She was shipped on board a Turkish vessel, and soon found that she had been sold to an extensive dealer in young girls. She reached the great city, and was conveyed to the *dépôt*, where she remained

a month to refresh herself, that she might look her best when brought to market. "Do not despair," said the black woman in charge of her; "endeavour to please, and you will be purchased by some man of rank, who will keep you like a princess. With your beauty, charms, and skill in music, you might well be the bride of the Sultan himself." Clio was examined by the dealer, and being pronounced in a marketable condition, she was brought to the place of sale. She passed through an outer room, in which a number of Nubians, Circassians, and others were exposed, most of them denuded. She was led into an inner room, and there ordered to take off her clothes. "Never, as long as I live!" was her reply. "You must, my foolish child," said her black friend; "it is only in presence of the Effendi. Mahommed Khan, the Sultan's nephew, is coming, and he will most likely buy you. If you don't strip at once, I must take off your clothes, for the Effendi is coming, and cannot be kept waiting a moment." "This is worse than death," exclaimed Clio, "worse than the battle, worse than the fire, worse than the water! but I survived those, and may survive this." The black woman took off her clothes, she resisting slightly as she came to the last. "Not that! I cannot part with that!" "You must, child." Clio began to repeat a prayer, which her good priest had taught her,

dwelling on the spotless purity of the Virgin, whom she implored to send cherubs to veil her modesty with their wings. These thoughts so absorbed her, that she was scarcely conscious of the entrance of His Highness. There she stands, with no robe but her innocence; but, possessed of most bewitching beauty,—

“ Loveliness needs not the foreign aid of ornament,
But is, when unadorned, adorned the most.”

His Highness was delighted, and agreed to give the extravagant sum demanded, 40,000 piastres, for her. “ Clothe the child,” were his words, “ lest she should get cold ;” and that very night she was conveyed to his harem. She heeded not her guards, nor the elegant vehicle that was sent for her, her mind being fixed on saints and angels. She was allotted two attendants, and a beautiful lyre, on which she was asked to play her sweetest airs. Music during her happy girlhood had frequently inspired that pleasing melancholy which serves as an emollient to the more boisterous humours of youth ; it was now destined to be a means of waking her from that lethargy into which she had lately fallen. The chords of sorrow loosened as she touched the lyre, and as she played her soul flowed to her finger ends, then rushed to her heart, when she awoke to life and active circulation—she was alive, and had a work to do ! His Highness came. “ Bring

me a pipe and coffee. And now, my girl, tell me your name, and all about your history.” He spoke in a kind voice, and in good Greek. Clio told her tale with simple artlessness. “This is wonderful, my child! you will make me love you more than all my girls, for you are brave as well as loving, and when you are a good Mahomedan you may be my Sultana.” Clio played her sweetest air, and His Highness was delighted. “I don’t feel well,” said he at length; “carry me to bed,” and a litter being brought, the old man was conveyed away to the apartments of his elder Sultana. His Highness was lifted into bed, for he could not walk: this was his second stroke of paralysis.

He had a beautiful villa on the opposite side of the Bosphorus, noted for its bowers of roses, its fountains, and its halls. Thither, when he was somewhat recovered, he had himself conveyed in his large *caïque*, and the choicest ornaments of his harem followed in smaller vessels. Clio was in a little *caïque*, with a few trusty eunuchs as a guard. She threw the window of the cabin open, and gazed upon the moon, which illumined the wake of the boat, and cast dim shadows on the water. She took her lyre, and in sorrow began those airs which had often echoed through the groves of Mount Hymettus. She played for half an hour, and at last, looking through the window again, saw

a ship following their track. It was soon alongside, when the captain in a stern voice demanded to know who was on board. He was answered, "Part of the harem of His Highness Mahommed Khan." This voice was not strange to Clio; it reminded her of her childhood, and of a sweet scene in a vineyard. She could hardly speak from emotion, but started out of the cabin, and stood on deck. It was a full moon, and the night was clear. She thought she recognised a well-known figure on the deck of the strange ship; but, to be sure, she called on Albano by name, and stated her sorrows. He in a hurried sentence ordered a boat to be lowered to board the *caïque*, and at the same time all canvas to be made ready to sail down the Bosphorus with the utmost dispatch. Clio was soon in Albano's arms, and in a few minutes the "felucca" was sailing at a rapid rate towards the Archipelago.

What a meeting! Much was related by each. Albano told how he had heard of her capture, and how he had vowed to spend the best years of his life in endeavouring to discover her dwelling-place. "But ere we settle in our new home, we must go and visit my father and mother, that they may mourn with us over the dead, and rejoice in our happiness."

They came in sight of the little port nearest their former home, and burning with anxiety to see their friends and be united with the rites of their church,

they determined to land, regardless of the surf which rose in clouds on the high rocks. The pilot warned them not to attempt it, but Clio, thinking she had a charmed life, laughed at him. They entered the boat, and rowed for the land. It was tossed about, and was often nearly upset. "Turn back!" said Clio; but as she spoke, a swell drew the boat down, and next a wave half filled her, and she capsized. Most of her crew being thrown out, swam to the shore; but Clio and Albano, as they sat clasped in each other's arms, went down.

On the morrow, the sea being calm and clear, the fishermen saw a boat many fathoms down, and with grappling-irons brought her to the surface. Seated in the stern were Albano and Clio, in mute embrace. Her head, like a pensive snow-drop, hung down and rested on his shoulder.

They were buried in the same grave, on which stands a cypress and a willow.

CHAPTER XXVIII.

*Metaphysics v. Phrenology ; Importance of the latter Science.—
My Ultima Thule of Knowledge.*

OUR family have for some generations taken a considerable interest in moral and mental philosophy. Books on the subject were occasionally borrowed, and opened with pleasure by me in my earliest teens. But, although affording much that was interesting, they, for the greater part, from not presenting practical examples, analogous to those found in good works on other branches of natural history, did not invite my attentive study, my love of objective philosophy being stronger than that of the purely abstract. I was delighted, however, to find one day on the table a work written with great perspicuity, abounding in examples giving a clear analysis of the faculties common to man, which were placed before the mind with ample proof of a tangible and measurable character. The book was COMBE'S ELEMENTS OF PHRENOLOGY. On reading this with care I obtained a glimpse of a noble course of thought—nothing else than the

I was like the mariner who had found a means of guidance, not liable, like landmarks, to be obscured by fogs or darkness. I could now take the helm of my own ship, with a confidence which I had not hitherto known. The study of the characters in connection with the phrenological developments of the persons I have met has afforded me infinite delight. The dispositions of men are as varied as their faces, which give an endless variety of study. Interest is in proportion to the capital at stake—the Mind of Man. A very large portion of the sorrows which afflict the human race may be traced to injudicious education ; to the bringing up of individuals on wrong principles ; to the prominence given to the unworthy ; and to the exaltation of the mean ; and to the neglect of the culture of those qualities which are most useful and most in accordance with the mission of the man, to find which we have a sure guide in phrenology. Were moralists guided by this science, what benefit to mankind would accrue ! The weak would not be tried beyond their strength ; tenderness would not be misplaced ; the term “charity” would not be abused ; severity and control, wisely executed, would hold in check vices which, like the pendulum, balance from man to man. The legislator would form laws suited to the wants of nations and communities, whose relation to him would be as children to a father. The

manufacturer, perceiving the qualities of mind of his workman, would set each his task, and select his overseers with a skill hitherto unknown. The commander by land or sea, the minister for foreign or domestic affairs, would find servants suited to his work; the father, having a knowledge of the disposition of his offspring, could direct their studies and train their various powers so that his children might be able to double their means of usefulness in life. But the man, ere he can do this, must govern *himself*:—this government is taught by God.

I had now reached a science which I felt included all sciences, as it takes account of all the operations of the mind. I could go no further; but I could extend my operations over a wider area, and I could dive more deeply beneath the surface.

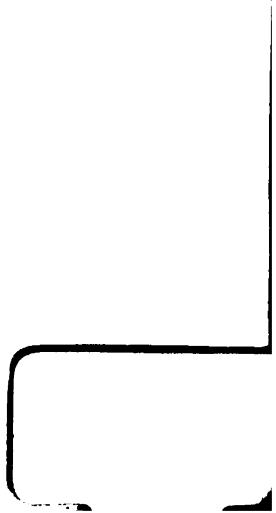
Seeds of thought like these, sown at this time, after the lapse of two years, began to show a small blade above the ground; but the ear was not seen for some more years, and the fruit was not ripe until ten years after the sowing of the seed.

THE END.

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THE PRACTICAL USE OF THE HISTOGRAM

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